

**SONY®**



V03150

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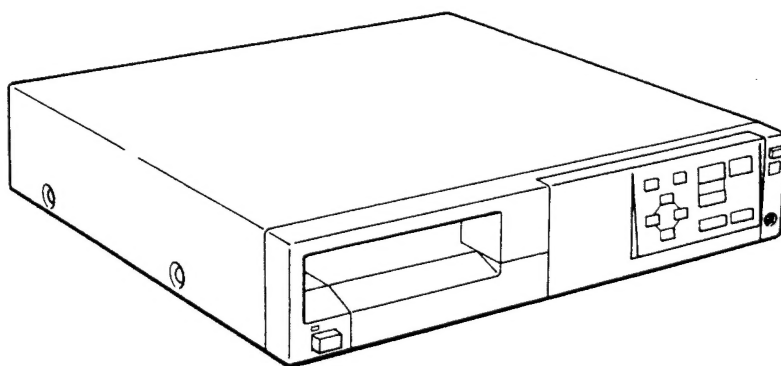
COLOR VIDEO PRINTER

# UP-1200EPM

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## SERVICE MANUAL


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**WARNING !!**

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

**SAFETY-RELATED COMPONENT WARNING !!**

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.



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## SECTION 1 GENERAL

This section is extracted from instruction manual.

### 1-1. SPECIFICATIONS

- Power requirements
  - 220 to 240 V AC (~), 50/60 Hz
- Power consumption
  - About 1.0 A max. at 25°C, 240 V AC (~)
- Operating temperature
  - 5°C to 40°C (41°F to 104°F)
- Operating humidity
  - 20 % to 80 % (no condensation allowed)
- Storage and transport temperature
  - 20°C to 60°C (-4°F to 140°F)
- Storage and transport humidity
  - 20 % to 90 % (no condensation allowed)
- Dimensions
  - About 424 × 91 × 397 mm (w/h/d)
  - (16<sup>3</sup>/<sub>4</sub> × 3<sup>5</sup>/<sub>8</sub> × 15<sup>3</sup>/<sub>4</sub> inches)
- Mass
  - About 8.5 kg (18 lb 12 oz)
- Printing system
  - Sublimation heat transfer printing
- Thermal head
  - 6.72 dot/mm (608 dots)
- Total gradation
  - 256 levels each for yellow, magenta, and cyan
- Frame memory
  - One frame memory
- Printing time
  - Approximately 60 seconds (normal size color printing)
  - Approximately 30 seconds (monochrome printing)
- TV system
  - PAL B.G.I. standards
- Input connectors
  - S-VIDEO (Separate luminance (Y) and chrominance (C) signals): DIN 4-pin
    - Y: 1 Vp-p
    - C: 0.3 Vp-p color burst
    - 75 ohms (75 ohm termination switch set to ON)
  - VIDEO (PAL composite video signal): BNC connector
    - 1 Vp-p, 75 ohms (75 ohm termination switch set to ON), sync negative
  - AC IN (for power input)
- Output connectors
  - S-VIDEO (Separate luminance (Y) and chrominance (C) signals): DIN 4-pin
    - Y: 1 Vp-p, 75 ohms
    - C: 0.3 Vp-p color burst, 75 ohms (75 ohm termination switch set to ON)
  - VIDEO (PAL composite video signal): BNC connector
    - 1 Vp-p, 75 ohms (75 ohm termination switch set to ON), sync negative
- Controls connectors
  - REMOTE 1 (front panel, for the supplied remote control unit only): Special mini jack
  - REMOTE 2 (automatic printing connector): Stereo mini jack
    - For details of the timing pulse to REMOTE 2, see "Using the automatic printing capabilities" on this page.

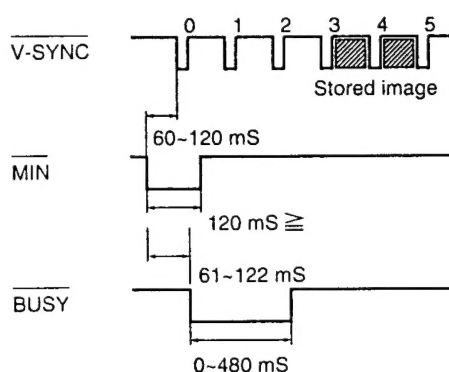
- Ink ribbon cassette and printing sheet sets
  - Color printing pack: UPC-1010 (100 sheets)
  - B & W printing pack: UPC-1020 (100 sheets)
  - Self laminating color printing pack: UPC-1040 (75 sheets)
- Supplied accessories
  - Color printing pack UPC-1010 (1)
  - Paper tray (1)
  - Paper cover (1)
  - Remote commander RM-5100 (1)
  - Connecting cable for the remote commander (1)
  - Dry battery (R6) (2)
  - AC power cord (1)
  - Instructions For Use (1)

### Using the automatic printing capabilities (REMOTE 2)

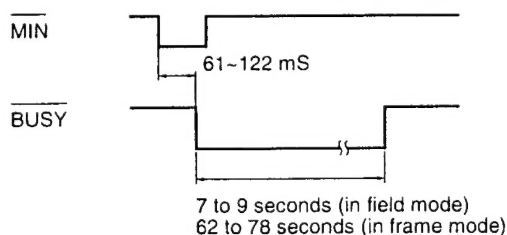
If you send the remote control pulse signals illustrated below through the REMOTE 2 connector, the printer is remotely controlled according to the settings of REMOTE 2 from the SET UP menu. (see "Selecting the Operation Mode for Automatic Printing Capabilities" page 52)

To begin, turn on the power and select the input signal. Display the image from the video source, then send a remote control signal shown below.

#### MEMORY IN timing



#### Printing timing

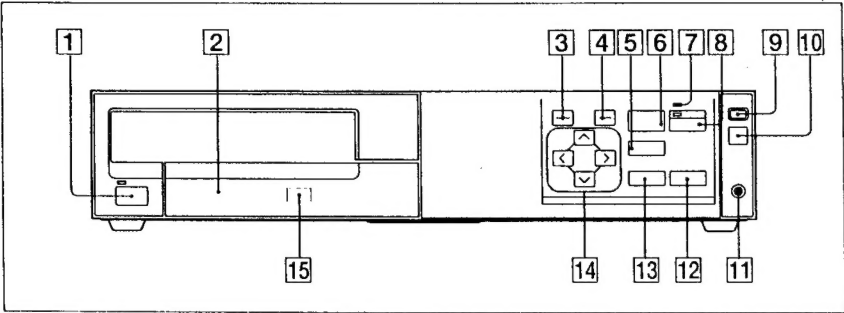


Design and specifications are subject to change without notice.

1-2. LOCATION AND FUNCTION OF PARTS AND CONTROLS

For details, see the pages indicated in ( ).

Front



- 1 POWER** (1) switch  
Press to turn the printer on or off.

**2 Paper tray/paper cover** (10, 39)  
Paper tray: Load paper into this tray.  
Paper cover: The printout is ejected to this tray

**3 MENU button**  
This button is used to display menus or to return to the regular screen from the main menu or sub menus.

**4 EXEC button** (27, 33, 34, 35, 47)  
Press this button to return to the previous menu. Also, this button is used to enter characters for a caption.

**5 SOURCE/MEMORY button** (15, 29, 30, 50)  
Press to select which signal is to be output to the monitor.  
The memory image and source image are changed whenever you press this button.

**6 MEMORY IN** ⇄ button (15, 29, 30)  
Press to store an image into memory.

**7 ALARM lamp** (62)  
This lamp lights, in orange, when the paper has jammed or any problem occurs.
- 8 PRINT** □ button (16, 29, 30)  
Press to make printouts.

**9 PUSH OPEN button** (8)  
Press to open the right front panel door when loading an ink ribbon cassette.

**10 Remote sensor** (41)  
Aim the head of the remote control unit toward this sensor.

**11 REMOTE 1 connector** (39)  
Used to Connect the remote control unit (supplied) when being used as a wired type.

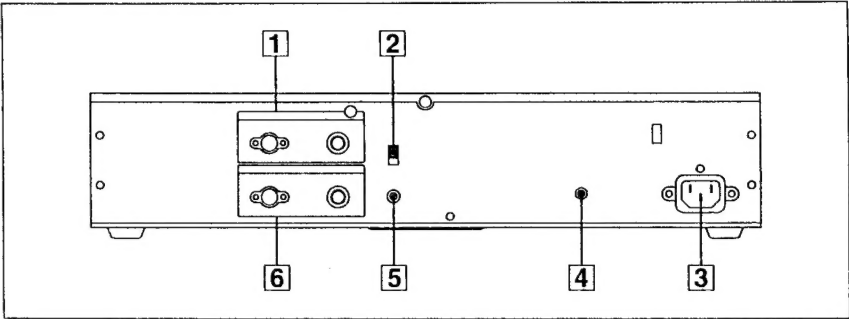
**12 STOP button** (16, 29, 54)  
Press to stop printing midway.  
Press this button when the message "STOP STOP STOP" appears.

**13 MEMORY PAGE button** (23)  
Press to select the memory page.

**14 Cursor keys**  
Press to position the cursor. Select a desired item from the menu by pressing the ^ or v button and set the value by pressing the < or > button.  
Also, these keys are used to enter characters for a caption.

**15 PUSH indication** (10, 64)  
Press to remove the paper tray.

Rear



- 1 INPUT connectors** (37)  
Used to connect to the video equipment for source image.

Connector	Connectable equipment
S-VIDEO	Video equipment with a Y/C separated output
VIDEO	Video equipment with a composite video signal output

Refer to "Important safeguards/notices for use in the medical environments on page 2.
- 2 75-ohm termination switch (for PAL composite video signal)** (37)  
Normally, set this switch to ON. Set it to OFF if the input signal should drop when you connect additional equipment to the video equipment.

**3 ~ AC IN connector** (37, 38, 39)  
Used to connect to a wall outlet with the supplied power cord.
- 4 Equipotential ground terminal** ⚡  
Used to connect to the equipotential plug to bring the various parts of a system to the same potential.  
Refer to "Important safeguards/notices for use in the medical environments on page 2.

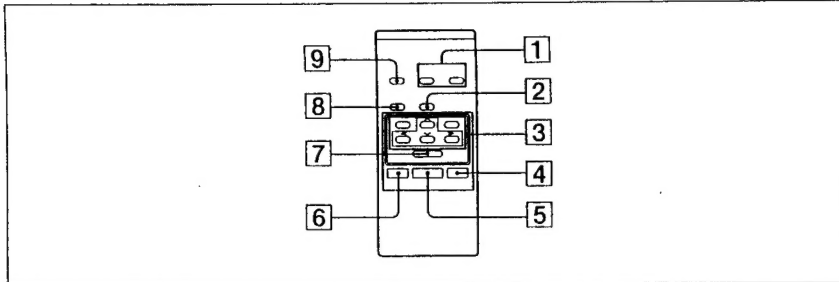
**5 REMOTE 2 connector** (39)  
Used to connect the RM-91 remote commandnder (not supplied) or input remote control pulse signals for automatic printing.

**6 OUTPUT connectors** (38)  
Used to connect to the video monitor.

Connector	Connectable video monitor
S-VIDEO	Video monitor with a Y/C separated input
VIDEO	Video monitor with a composite video signal input

Refer to "Important safeguards/notices for use in the medical environments on page 2.

## Remote Commander RM-5100



### 1 PRINT QTY + and - buttons (18)

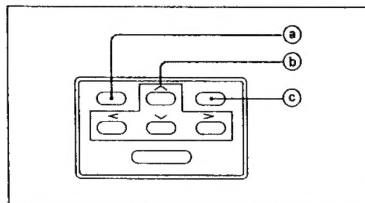
Used to set the number of copies of one printout (on the regular screen).

Button	Operation
+	Increases the number of copies.
-	Reduces the number of copies.

### 2 MULTI PICTURE button (26)

Press to access the MULTI PICTURE sub menu directly from the any other screen.

### 3 Menu control keys



#### a MENU button

This button is used to display menus or to return to the regular screen from the main menu or sub menus.

#### b Cursor keys

Press to position the cursor. Select a desired item from the menu by pressing the ^ or v button and set the value by pressing the < or > button.

Also, these keys are used to enter characters for a caption.

### c EXEC button (27, 33, 34, 35, 47)

Press this button to return to the previous menu. Also, this button is used to enter characters for a caption.

### 4 PRINT button (16, 29, 30)

Press to make printouts.

### 5 MEMORY IN button (15, 29, 30)

Press to store an image into memory.

### 6 SOURCE/MEMORY button (15, 29, 30, 50)

Press to select which signal is to be output to the monitor.

The memory image and source image are changed whenever you press this button.

### 7 STOP button (16, 29, 54)

Press to stop printing midway.

Press this button when the message "STOP STOP STOP" appears.

### 8 COLOR ADJUST button (43)

Press to access the COLOR ADJUST sub menu directly from any other screen.

### 9 MEMORY PAGE button (23)

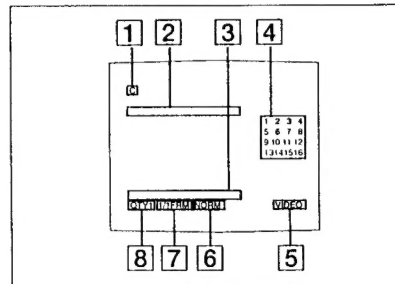
Press to select the memory page.

## Monitor Display

There are two types of screen display; the regular screen display and the menu screen.

### Regular screen message

When you first turn on the printer, the regular screen message appears.



#### 1 C (Caption)

C is displayed in white when the printer is set to print a caption.

C is displayed in dark blue when the printer is not set to print a caption.

M is displayed in white when the printer is set to print a mirror caption.

"M" for mirror caption may be displayed when you turn the power on even though the print mode is not set to MIRROR ON. (see page 35)

#### 2 Error message display area

Error messages are displayed.

#### 3 Warning message display area

Warning messages are displayed.

#### 4 Number of four or 16 reduced image

When the printer is set to store multiple reduced images into memory, corresponding numbers appear to indicate the memory status.

### 5 Image type display

This indicates the type of image shown on the monitor screen.

When the image being played back from print source equipment is displayed on the screen, the corresponding print source (the input signal connector name, for example VIDEO) appears. When an image stored in memory is displayed on the screen, MEMORY appears.

### 6 Print mode display

This indicates the selected print mode.

Several examples are shown below:

Display	Print mode
NORM	Makes a printout of one normal image
N2	Makes a printout of two identical normal images
MIR	Makes a printout of one mirror image
M16	Makes a printout of 16 reduced mirror images

### 7 Memory page display

The memory page you select appears.

The memory page whose image is being printed blinks in green.

The following shows several examples.

Display	Meaning
1/1FRM	The frame mode is selected.
1/2FLD	The second page is selected in field mode.

### 8 Number of copies to be printed

Indicates the number of copies to be printed.

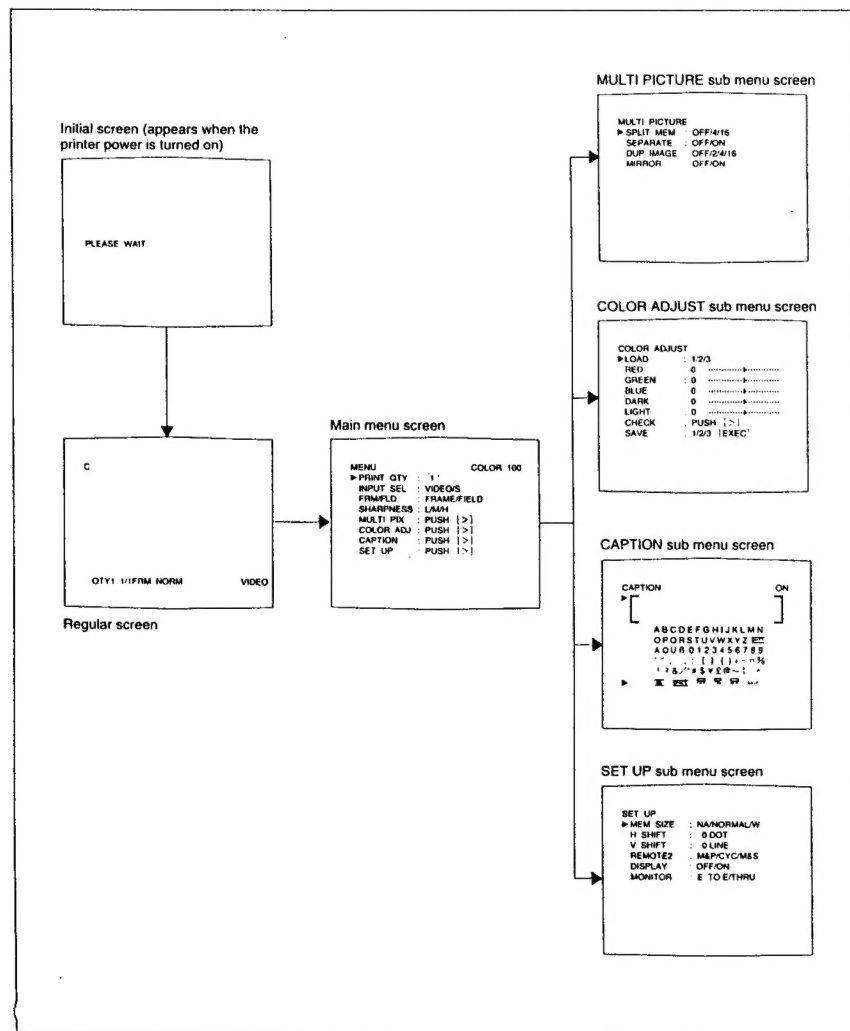
This item blinks while the printer is busy. Also, the color changes to indicate the progress while making a color printout, as follows:

Printing start - yellow - magenta - cyan - printing end. When making black and white printouts, this blinks in white.

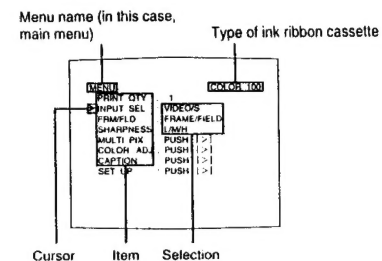
## Menu screen

### Menu screen tree-chart

The menu screen configuration is shown using the tree-chart.



## Menu screen display



### Display color

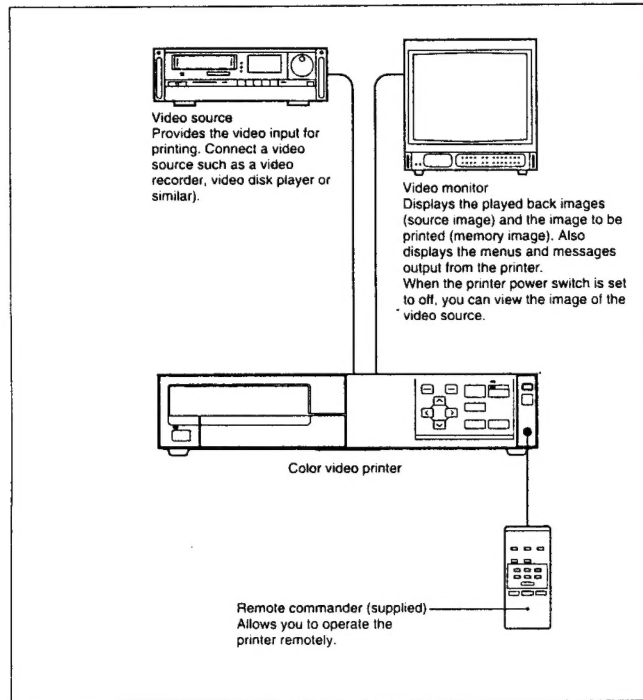
The color indicates the printer status.

Display color	Meaning
Light blue	Indicates the menu name.
Green	In the item column, indicates the selected item. In the selection column, indicates an item that has already been set or one that must be set.
White	In both the item and selection column, indicates that the item has not been selected or has not yet been set.
Dark blue	Indicates that this item or selection cannot be selected. They are functions which become effective depending on another item or selection settings.

## 1-3. SYSTEM OVERVIEW

### System Configuration

The following shows an example printer system configuration.



## 1-4. BEFORE PRINTING

This section describes the following operations that must be made prior to start printing after installing the printer and making connections.

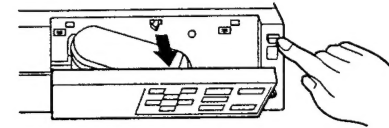
- Loading an ink ribbon cassette (see page 8)
- Loading paper (see page 10)
- Selecting the input signal (see page 12)

Once the above operations are done, there should be no need to subsequently perform in routine printing operations. Perform the above operations, if necessary.

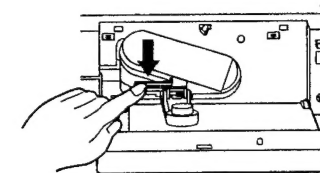
### Loading an Ink Ribbon Cassette

To make printouts, an ink ribbon cassette and paper should be loaded. Both of those should be used in correct pairs. (see "Ink Ribbon Cassette and Paper" page 60)

- 1 Push the PUSH OPEN button.  
The front panel opens.

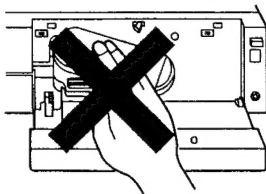


- 2 Remove the ink ribbon cassette by pulling down the EJECT lever.

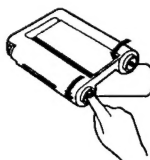


#### Note

Never put your hand into the ink ribbon cassette dock. The thermal head becomes very hot. You may burn yourself if you touch it.

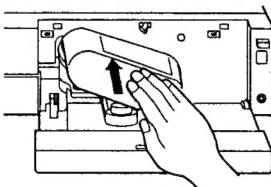


- 3** Take up any slack in the ink ribbon.  
If the ribbon is left slack, it may be crumpled and damaged when inserted.

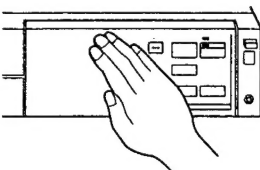


Wind the spools of the ink ribbon cassette as illustrated until a black bar extending full-width of the ribbon appears on the ink ribbon.

- 4** Insert the ink ribbon cassette firmly until it stops.



- 5** Close the front panel.



Continue to next page →

#### Notes

When using ink ribbon cassettes:

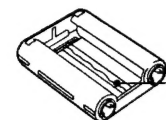
- Once an ink ribbon has been completely used, replace it. Ink ribbon cassettes are not reusable.
- Do not touch the ribbon or place the cassette in a dusty place. Body oils or dust stuck to the ink ribbon will cause imperfect printing.

When storing ink ribbon cassette:

- Avoid placing the ink ribbon cassette in a location subject:
  - high temperatures
  - high humidity
  - excessive dust
  - direct sunlight
- Store a partially used ink ribbon in its original bag.

#### If your ink ribbon should tear

Repair the tear with transparent tape. There should be no problem in using the remaining portion of the ribbon.



Transparent tape

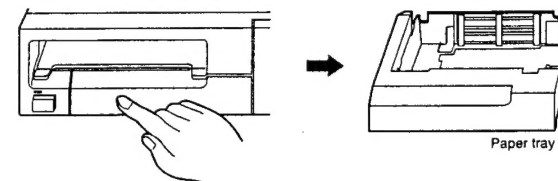
## Loading Paper

Follow these steps to load paper in the printer. Use only the ink ribbon cassette and paper packed in the same carton, that is correctly in pairs. Be careful not to touch the printing surface.

#### Note

When loading the paper while the printer is operating, do not turn off the power. If you turn off the power, the image stored in memory will be lost.

- 1** Push PUSH on the paper tray.  
The paper tray is ejected.

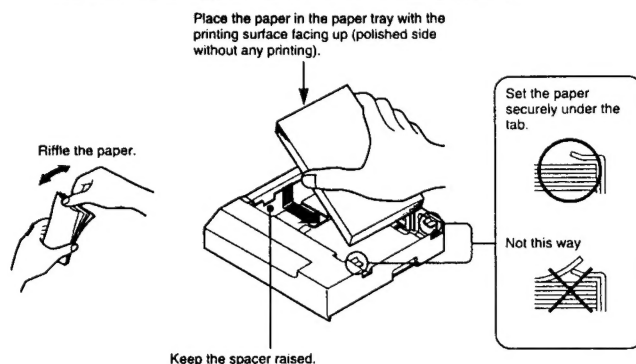


Paper tray

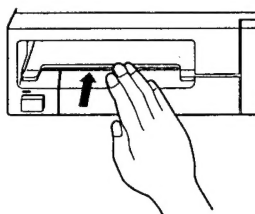
## 2 Place the paper into the paper tray.

### Notes

- The paper tray holds up to 100 sheets. When you add paper to a partly-full tray, be careful that the total number of sheets does not exceed 100. If you exceed this limit, paper jams may occur.
- Load the paper so that it lays flat in the paper tray. If the paper is curled, it will overflow the paper tray and the printing position may shift. If this happens, load fewer sheets in the paper tray.



## 3 Slide the paper tray back into the printer until it clicks into place.



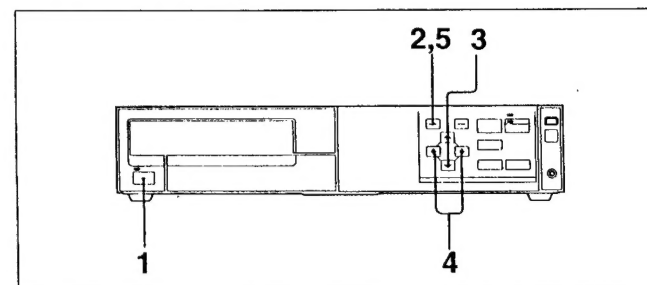
### Notes

When storing paper:

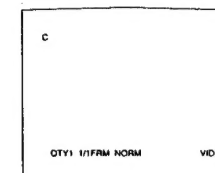
- Avoid placing the paper subject to:
  - high temperatures
  - high humidity
  - excessive dust
  - direct sunlight
- Keep the package for storing unused paper.

## Selecting the Input Signal

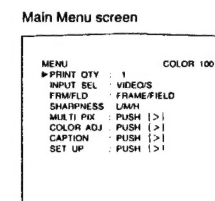
Before printing, select the input signal. Once you have selected the input signal, this setting remains as is until you select another source.



- 1 Turn on the video monitor and the printer.  
The following message appears when the printer is ready to operate.



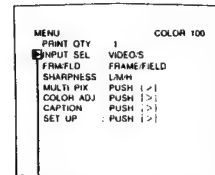
- 2 Press the MENU button.  
The right screen appears.





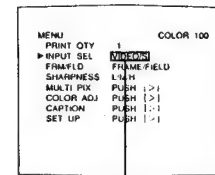
## 1-5. MAKING FULL-SIZE PRINTOUTS

- 3** Select INPUT SEL by pressing the  $\wedge$  or  $\vee$  button.



Move the cursor to INPUT SEL by pressing the  $\wedge$  or  $\vee$  button.

- 4** Select the desired input signal by pressing the  $<$  or  $>$  button.



Switch the desired input signal to green by pressing the  $<$  or  $>$  button.  
The name of the selected input signal appears in green.

**Video monitor**  
(The name of the selected input signal appear on the screen.)

V  $\rightarrow$  VIDEO

S  $\rightarrow$  S-VIDEO

**Source signal of the image to be printed**

Signal from the video equipment connected to the VIDEO INPUT connector

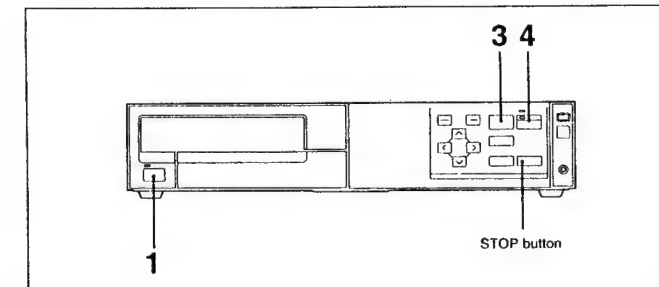
Signal from the video equipment connected to the S-VIDEO INPUT connector

- 5** Press the MENU button.  
The regular screen appears.

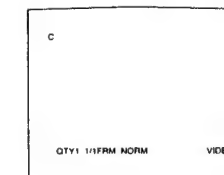
This section explains how to make a full-size printout. The operations described here is the basic procedure for making a printout.

### Before making a full-size printout

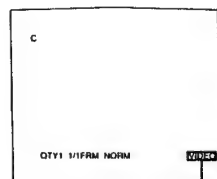
- All connections should have already been made. (see page 37)
- Ensure that the appropriate ink ribbon cassette/paper set is being used and that they are correctly loaded. (see pages 8, 10 and 60)
- Select the input signal to be used to make a printout. (page 12)
- Set the memory mode to store one full-size image into memory. (see page 25)
- Select the appropriate memory page. (see page 23)
- Set the print mode to make a printout of one normal full-size image. (see page 27)



- 1** Turn on the video monitor and the printer.  
The right message appears when the printer is ready to operate.

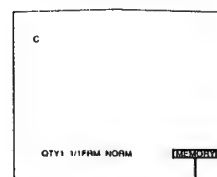


- 2** Start the video source.  
(This operation is done using the controls of the video equipment acting as the source.)



Shows that the image from the video equipment are displayed on the screen.

- 3** Press the MEMORY IN button at the instant when the image you want to print appears on the screen.  
That image is stored into memory.  
The memory image (stored into memory) is displayed on the screen.



Shows that the images stored into memory is displayed on the screen.

#### If the stored image is blurred

A quickly moving image may be blurred when it is printed. If this happens, switch the FRM/FLD (frame/field) mode setting to FLD on the main menu and perform printing again. This should eliminate blur from the printout. However, since printing in field mode has a lower resolution than in the frame mode, the ultimate print quality will be slightly degraded. (see "About Memory" page 21)

#### To change the stored image

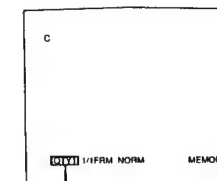
- ① Press the SOURCE/MEMORY button.  
The image from the video source appears.
- ② Press the MEMORY IN button at the instant when the image you want to print appears.  
The previous image is replaced.

#### Note

If you turn off the power, the image stored into memory will be lost. Thus, store the image into memory again when you turn on the power.

Continue to next page →

- 4** Press the PRINT button.  
It takes about 60 seconds to make a color printout, or 30 seconds to make a black and white printout.



Blinks while printing.  
During color printing: Printing start → yellow → magenta → cyan → printing end  
During black and white printing: Printing start → white → printing end

#### Notes

- Do not handle the paper until printing has been completed.
- Do not open the front panel while the printer is printing. Doing so may produce an unsatisfactory printout.

#### To stop printing before completion

Press the STOP button. Printing is abandoned and the paper is ejected to the print tray.

#### If the printer does not print

The printer will not print when an error message is displayed on the video monitor. (see "Error Messages" page 62)

#### If a black line appears on the printout

Sometimes, a black line appears on the printout, although it does not appear on the video monitor. You can eliminate the black line from the printout. (see "Changing the Printout Area" page 50)

### Notes

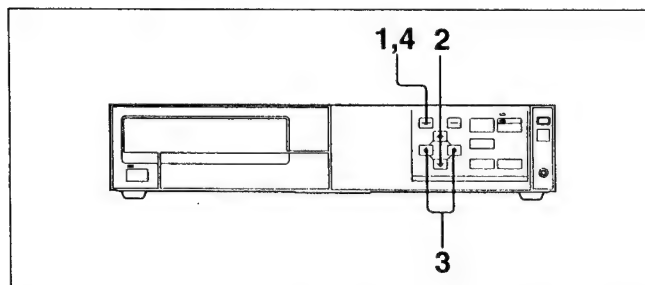
When preserving your printouts:

- Keep printouts in a dark and cool place.
- Do not stick plastic tape to the printout. Also avoid leaving plastic eraser on top of the printout or putting the printout between things which contain plasticizer (a desk mat, etc.).
- Do not pour alcohol or other volatile organic solvents on the printouts.

## Making Multiple Copies of Identical Image

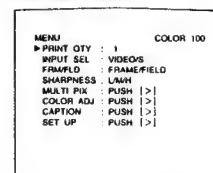
You can print up to 100 copies of a stored image.

Do the following steps before you start printing or while printing. You can change the designated number of copies any time during printing.

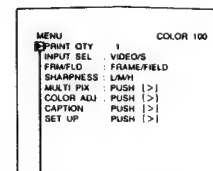


- 1 Press the MENU button.  
The right screen appears.

Main Menu screen



- 2 Select PRINT QTY by pressing the ^ or v button.

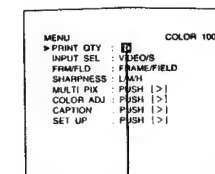


Move the cursor to PRINT QTY by pressing the ^ or v button.

Continue to next page →

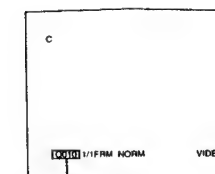
- 3 Set the number of copies by pressing the < or > button.

When setting	Button
To decrease the quantity	<
To increase the quantity	>



Quantity of copies

- 4 Press the MENU button.  
The regular screen appears.



Quantity of copies set in step 3

### When paper runs out during printing

Fill the paper tray with paper and press the PRINT button again. (see "Loading Paper" page 10)

### Designating the number of copies by the remote commander (supplied)

You can designate the number of copies directly on the regular screen by using the supplied remote commander.

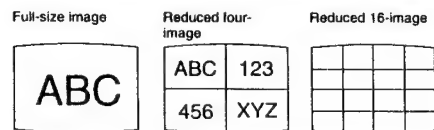
To increase the number of copies, press the PRINT QTY + button. To decrease the number of copies, press the PRINT QTY - button.

When setting	Button
To decrease the quantity	PRINT QTY -
To increase the quantity	PRINT QTY +

## 1-6. MAKING VARIATIONS OF PRINTOUTS

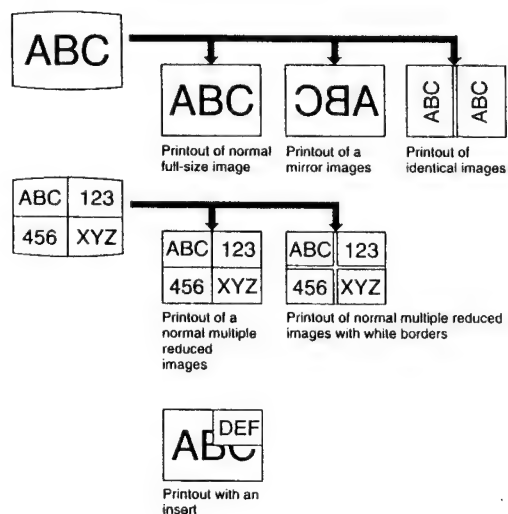
You can store various kinds of images into memory by changing the memory mode and can vary the printout of the stored images by changing the print mode. This section explains how to set the memory mode and change the print mode.

### Types of images that can be stored into memory



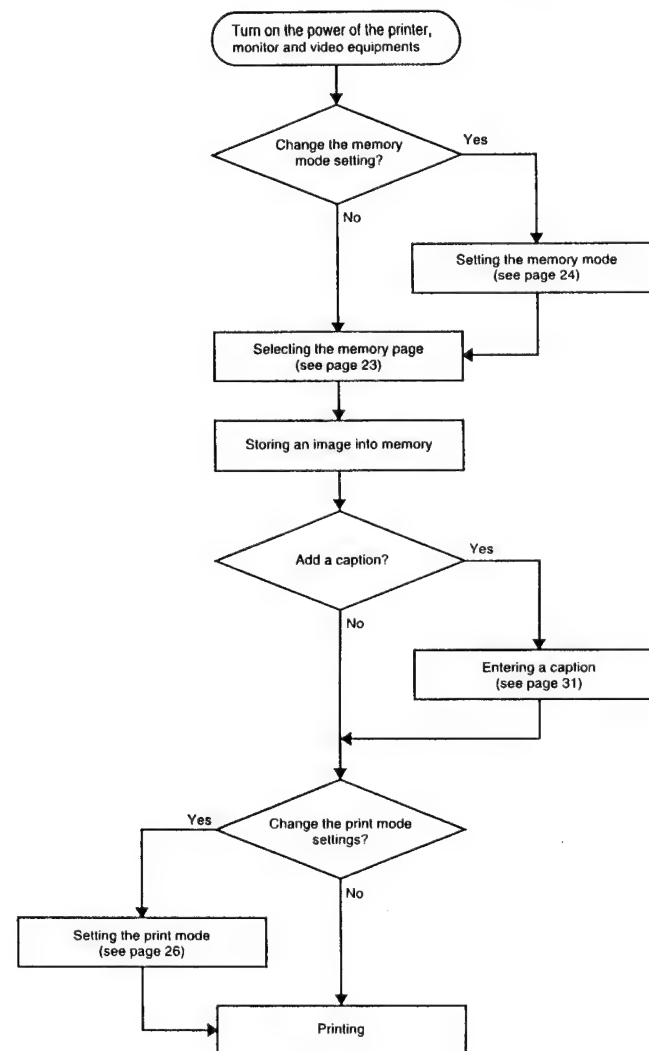
### Types of printouts that the printer can produce

By varying the print mode, the following types of printout can be made using images stored in memory.



## Printing Operation Flowchart

The following flowchart shows the flow of a printing operation.



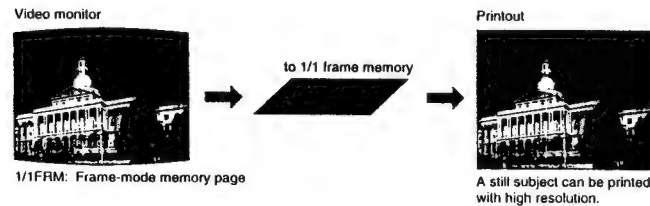
## About Memory

To make a printout, it is first necessary to store the desired image into memory. The method of storing images into memory is called memory mode. By setting memory mode, you can store a full-size image or multiple reduced images into memory. Also, you have to decide how to use the printer's memory to store images. Two methods of using memory are supported. One is frame mode, while the other is field mode. The number of memory images you can store depends on whether you select frame or field mode.

### Frame mode and filed mode

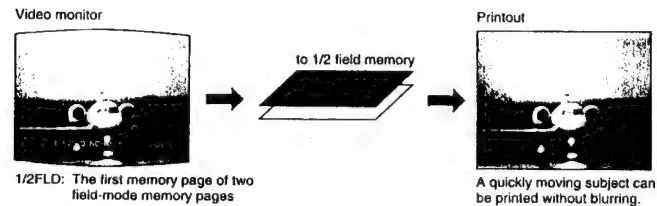
#### Frame (FRM) mode

One image is stored in one memory.



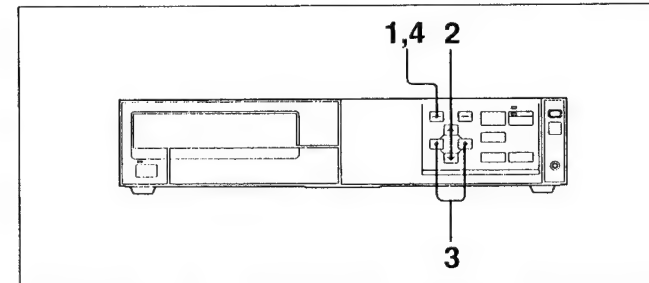
#### Field (FLD) mode

One memory is divided into two, and images for the two screens are stored to the resulting memory pages.



## Selecting frame or field mode

Before storing an image, select frame or field mode.



- 1 Press the MENU button.  
The following screen appears.

Main Menu screen

```

MENU      PRINT QTY : 1      COLOR 100
  PRINT SEL : VIDEO/S
FRM/FLD   FRM/FLD
SHARPNESS : L/M/H
MULTI PIX : PUSH [ > ]
COLOR ADJ : PUSH [ > ]
CAPTION   : PUSH [ > ]
SET UP    : PUSH [ > ]
    
```

- 2 Select FRM/FLD by pressing the  $\wedge$  or  $\vee$  button.

```

MENU      PRINT QTY : 1      COLOR 100
  PRINT SEL : VIDEO/S
FRM/FLD   FRM/FLD
SHARPNESS : L/M/H
MULTI PIX : PUSH [ > ]
COLOR ADJ : PUSH [ > ]
CAPTION   : PUSH [ > ]
SET UP    : PUSH [ > ]
    
```

Move the cursor to FRM/FLD by pressing the  $\wedge$  or  $\vee$  button.

- 3 Select the desired mode by pressing the  $<$  or  $>$  button.

**FRAME:** We recommend that, whenever possible, you print in this mode.

**FIELD:** Select this mode to reduce blurring when you print a quickly moving image.

```

MENU      PRINT QTY : 1      COLOR 100
  PRINT SEL : VIDEO/S
FRM/FLD   FRM/FLD
SHARPNESS : L/M/H
MULTI PIX : PUSH [ > ]
COLOR ADJ : PUSH [ > ]
CAPTION   : PUSH [ > ]
SET UP    : PUSH [ > ]
    
```

Switch the desired mode to green by pressing the  $<$  or  $>$  button.

- 4 Press the MENU button.  
The regular screen appears.

## About memory pages

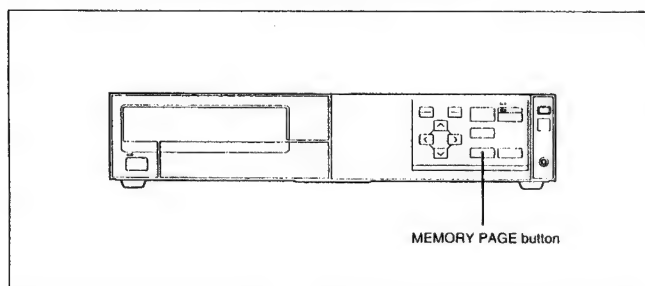
The unit has a single frame memory, enabling the unit to store one image in one memory page when FRM mode is selected, or two images in two memory pages when FLD mode is selected.

The memory used to store one screen image is called a memory page.

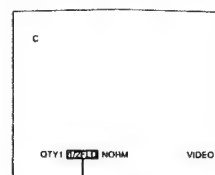
Selected memory mode	Number of usable memory pages	Usable memory pages
Frame mode (FRM)	1	1/1FRM
Field mode (FLD)	2	1/2FLD or 2/2FLD

## Selecting a memory page

To select a memory page, press the MEMORY PAGE button.



MEMORY PAGE button



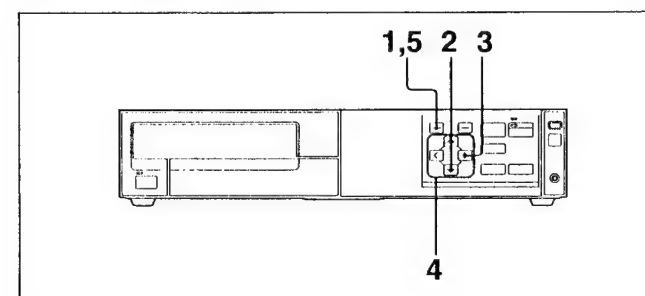
Press the MEMORY PAGE button until the desired memory page appears.

## Selecting the Memory Mode

Decide the method for storing images in memory. Once you have selected memory mode, this setting remains as is until reset, even if you turn the power off.

### To control the printer remotely by using the remote commander (supplied)

You can access the MULTI PICTURE sub menu by pressing the MULTI PICTURE button on the remote commander. Thus, press the MULTI PICTURE button to display the MULTI PICTURE sub menu. Then, follow the procedure below, starting from step 4.



- 1 Press the MENU button.  
The right screen appears.

Main Menu screen

```

MENU          COLOR 100
▶ PRINT QTY   : 1
INPUT SEL    : VIDEOS
FRM/FLD      : FRAME/FIELD
SHARPNESS    : LAMH
MULTI PIX    : PUSH >|
COLOR ADJ    : PUSH >|
CAPTION      : PUSH >|
SET UP       : PUSH >|
    
```

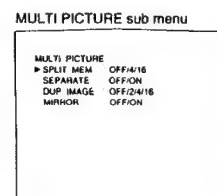
- 2 Select MULTI PIX by pressing the  $\wedge$  or  $\vee$  button.

```

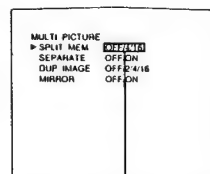
MENU          COLOR 100
PRINT QTY     : 1
INPUT SEL     : VIDEOS
FRM/FLD       : FRAME/FIELD
SHARPNESS     : LAMH
MULTI PIX     : PUSH >|
COLOR ADJ     : PUSH >|
CAPTION       : PUSH >|
SET UP        : PUSH >|
    
```

Move the cursor to MULTI PIX by pressing the  $\wedge$  or  $\vee$  button.

- 3 Press the > button.  
The right screen appears.



- 4 Set the memory mode.  
① Select the item to be set by pressing the ^ or v button.  
② Select the method for storing images by pressing the < or > button.



Switch the desired mode to green by pressing the < or > button.

Item for memory mode	When you select	Settings	Contents of setting
SPLIT MEM	To set the number of images to be stored in one memory page.	OFF	Storing a full-size image
		4	Storing four reduced images
		16	Storing 16 reduced images

- 5 Press the MENU button.  
The regular screen appears.

## Selecting the Print Mode

You can make variations of printouts from the images stored in memory pages by changing the print mode. (see "Types of printouts that the printer can produce" page 19)

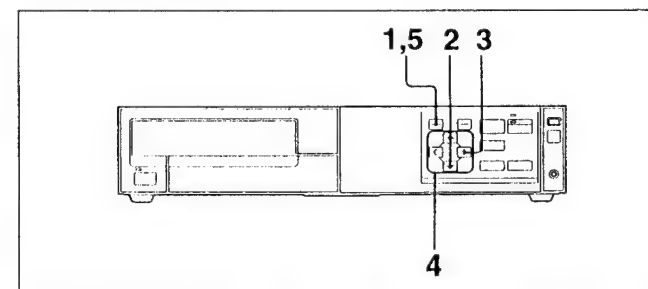
Once you have selected the print mode, this setting remains as is until you reset, even if you turn the power off.

### Note

The print mode setting to make printouts without white borders (SEPARATE OFF) does not remain when you turn the power off. The print mode is automatically set to make printouts with white borders (SEPARATE ON) when you turn the power on the next time.

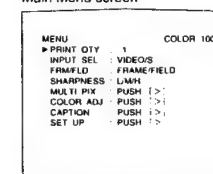
### To control the printer remotely by using the remote commander (supplied)

You can access the MULTI PICTURE sub menu by pressing the MULTI PICTURE button on the remote commander. Thus, press the MULTI PICTURE button to display the MULTI PICTURE sub menu. Then, follow the procedure below, starting from step 4.

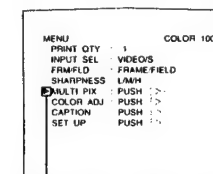


- 1 Press the MENU button.  
The right screen appears.

Main Menu screen



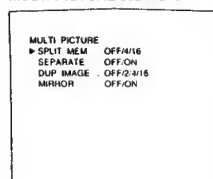
- 2 Select MULTI PIX by pressing the ^ or v button.



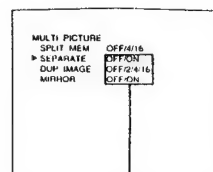
Move the cursor to MULTI PIX by pressing the ^ or v button.

- 3 Press the > button.  
The right screen appears.

MULTI PICTURE sub menu



- 4 Set the print mode.  
① Select the item to be set by pressing the ^ or v button.  
② Select the method for making a printout by pressing the < or > button.



Switch the desired mode to green by pressing the < or > button.

Item for memory mode	When you select	Settings	Content of settings
SEPARATE	To decide whether the images are printed with white borders	OFF	without white borders
		ON	with white borders
DUP IMAGE	To decide how many times identical images are printed in a single printout.	OFF	Printing a memory image one time
		2	Printing a memory image twice
		4	Printing a memory image four times
		16	Printing a memory image 16 times.
MIRROR	To rotate the image around its vertical axis (to make a mirror image printout)	OFF	Normal image
		ON	Mirror image

- 5 Press the MENU button.  
The regular screen appears.

#### To return to the main menu from the sub menu screen

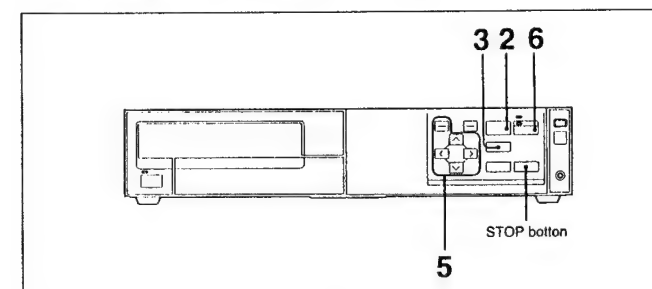
Press the EXEC button except when the SAVE item is selected on the COLOR ADJUST sub menu and when the cursor is positioned in the character entry area on the CAPTION sub menu.

## Making Printouts of Multiple Reduced Images

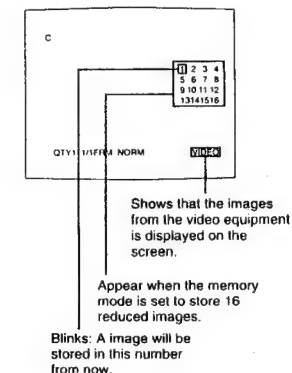
This subsection explains how to make printouts of multiple reduced images taking as an example, making a printout of 16 reduced images. (see "Selecting the Print Mode" page 26)

#### Before making printouts of 16 reduced images

- Set the memory mode to store 16 reduced images into memory. (see page 25)
- Select the appropriate memory page. (see page 23)

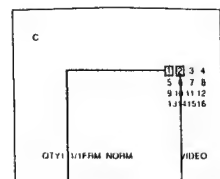


- 1 Start the video source.  
(This operation is done using the controls of the video equipment acting as the source.)





- 2 Press the MEMORY IN button at the instant when the image you want to print appears on the screen.  
The image is stored to the position whose the corresponding number blinks on the monitor display.  
The cursor moves to the next number, then blinks.



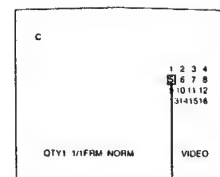
When an image has been stored into this position, the number lights in green. The cursor moves to the next number.

- 3 Press the SOURCE/MEMORY button.  
The image from the video equipment appears on the monitor display.
- 4 Repeat steps 2 and 3 until you have stored 16 images.

#### To change a stored image

Example: When you want to change the image stored to the 5th position

- ① Select 5 by pressing the ^, v, < or > button.
- ② Press the SOURCE/MEMORY button.  
The image from the video source appears.
- ③ Press the MEMORY IN button at the instant when the image you want to print appears.  
The previously stored image is replaced with the newly selected image.



Move the white blinking cursor to 5 by pressing the ^, v, < or > button.

#### To skip a previously stored image

When an image has already been stored, the previously stored image can be replaced by pressing the MEMORY IN button. Skip the number corresponding to the image to be skipped by pressing the ^, v, < or > button.

- 5 Set the print mode. (see "Selecting the Print Mode" page 26)
- 6 Press the PRINT button.  
The 16 reduced images are printed on one sheet of paper.

#### To stop printing midway

Press the STOP button. The printer stops printing and ejects paper to the paper cover.

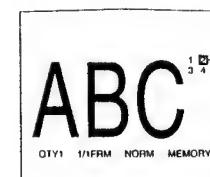
## Making Printouts with an Insert

You can make printouts with an insert by using the four- or 16-reduced image memory mode.

To make printouts with an insert, select the memory to FIELD.

Example: To make a printout with one of four reduced images inserted

- 1 Display the full-size image stored in memory. (Follow steps 1 to 3 of "Making Full-Size Printouts" on page 14)
- 2 Set the memory mode to store four reduced images. (see "Selecting the Memory Mode" page 24)
- 3 Move the white blinking cursor to the position where a reduced image is to be inserted, by pressing the ^, v, < or > button.  
Example: To insert the image to 2



Move the white blinking cursor to 2.

- 4 Press the SOURCE/MEMORY button to display the image from the video source, if necessary.
- 5 Press the MEMORY IN button at the instant when the image you want to print appears.  
The image is stored to position 2.
- 6 Press the PRINT button.  
An image with the insert is printed.

#### Note

If you insert a reduced image into an image stored in a different memory page, the printer can not make a printout of the image with an insert.

## 1-7. MAKING PRINTOUTS WITH A CAPTION

A caption, such as data or comments, can be added to a printout, using small characters below the image.

You can input up to 60 characters in NARROW size mode, NORMAL size mode, in WIDE size mode.

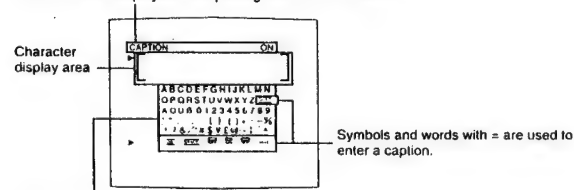
### Note

When the printout is printed in field mode, characters may not be printed clearly.

### About the CAPTION sub menu

A caption is entered from the CAPTION sub menu. A brief explanation of each item on the CAPTION sub menu, is given below before entering a caption.

CAPTION ON: displayed when printing with a caption  
CAPTION OFF: displayed when printing without a caption  
CAPTION MIR: displayed when printing with mirror characters



Character entry area  
The cursor is positioned at the highlighted character and this highlighted character is to be entered.

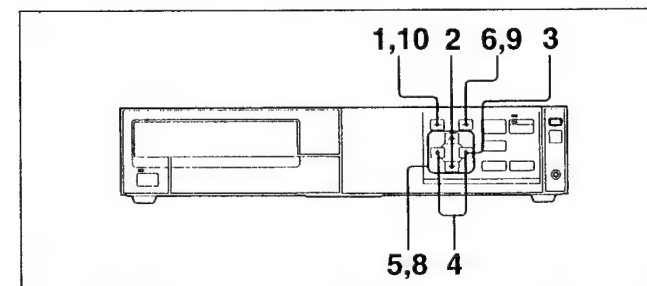
### Symbols and words with = used to enter a caption

Monitor display	Function
SPACE	One space
BS	One backspace
OFF	Selecting to print without a caption
ON	Selecting to print with a caption
MIR	Selecting to print with a mirror caption
SHIFT "	Selecting either capital letters or lower-case letters
SAVE	Storing the entered caption

- a) By highlighting SHIFT and pressing the EXEC button, capital letters are changed to lower-case letters, or lower-case letters are changed to capital letters.

## Entering a Caption

Enter a caption as follows. The setting remains valid until you enter a new setting - even if you turn the power off.



- 1 Press the MENU button.  
The right screen appears.

### Main menu screen

```

MENU          COLOR 100
▶PRINT QTY : 1
INPUT SEL : VIDEOS
FRMFELD : FRAME:FIELD
SHARPNESS : LMM
MULTI PIX : PUSH [>]
COLOR ADJ : PUSH [>]
CAPTION : PUSH [>]
SET UP : PUSH [>]
    
```

- 2 Select CAPTION by pressing the ^ or v button.

```

MENU          COLOR 100
▶PRINT QTY : 1
INPUT SEL : VIDEOS
FRMFELD : FRAME:FIELD
SHARPNESS : LMM
MULTI PIX : PUSH [>]
COLOR ADJ : PUSH [>]
CAPTION : PUSH [>]
SET UP : PUSH [>]
    
```

Move the cursor to CAPTION by pressing the ^ or v button.

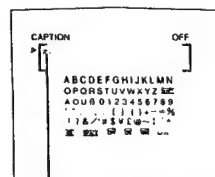
- 3 Press the > button.  
The right screen appears.

### CAPTION sub menu

```

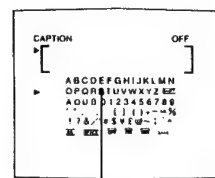
CAPTION      OFF
▶
  ABCDEFGHIJKLMN
  OPQRSTUVWXYZ
  ADU0123456789
  . , ( ) { } ~ - %
  ' > B / * $ % & @ - : +
  X Z Z Z Z Z Z Z Z
    
```

- 4 Select the position where you want to enter the character in the character display area by pressing the < or > button.



The cursor  $\square$  is highlighted at the selected position on the monitor display.

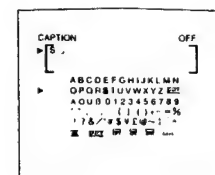
- 5 Select the character you want to enter by pressing the ^, v, < or > button.  
Example: To select S



Highlight S.

- 6 Press the EXEC button.

The selected character appears at the position highlighted on the character display area, then the highlighted  $\square$  moves to the next position.



#### When you enter a wrong character

Select  $\overline{BS}$  by pressing the ^, v, < or > buttons, then press the EXEC button. The character to the left of highlighted character will be deleted.

- 7 Repeat steps 4, 5 and 6 to enter the remaining characters of the caption.

#### To make a space

- ① Move the highlighted  $\square$  to the position where you want to make a space.
- ② Select SPACE by pressing the ^, v, < or > button.
- ③ Press the EXEC button.  
The one space is made and the cursor moves to the next position.

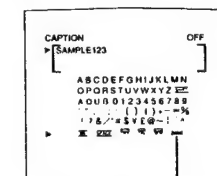
Continue to next page →

#### To replace a previously entered character without changing the number of characters

You can replace a previously entered character with a new one.

- ① Move the cursor to the character which you want to replace by the operation in step 4.
- ② Enter the correct character over the wrong character by the operations in step 5 and 6.  
The previously entered character is replaced with the new one.

- 8 Select SAVE by pressing the ^, v, < or > button.



Highlight SAVE.

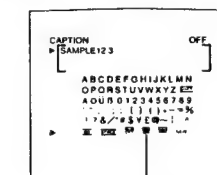
- 9 Press the EXEC button.  
The message "PLEASE WAIT" appears while the entered characters are being stored. Once they have been stored, the message disappears and the CAPTION sub menu appears again.

- 10 Press the MENU button.  
The regular screen appears.

#### Making printouts with a caption

Display the CAPTION input screen. (see "Entering a Caption" page 32)

- 1 Select ON by pressing the ^, v, < or > button.



Highlight ON.

- 2 Press the EXEC button.

#### Making a printouts without a caption

Select OFF in the above step 1.

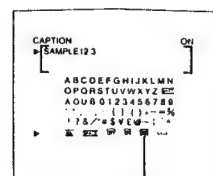
## Making a printout with a mirror caption

Display the CAPTION input screen. (see "Entering a Caption" page 32)

### Notes

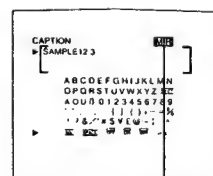
- To select MIR on the CAPTION sub menu, the setting of MIRROR on the MULTI PICTURE sub menu should be set to MIRROR ON. Otherwise, if you select MIR on the CAPTION sub menu with setting to MIRROR OFF on the MULTI PICTURE sub menu, error tone sounds.
- "M" for mirror caption may be displayed when you turn the power on even though the print mode is not set to MIRROR ON. Even if you make a printout in such a setting, caption will not be rotated around its vertical axis. In such a case, modify the setting on the CAPTION sub menu.

- 1 Select MIR by pressing the  $\wedge$ ,  $\vee$ , < or > button.



Highlight MIR.

- 2 Press the EXEC button.



MIR is displayed.

### To return to the print mode with normal caption

- ① Select ON by pressing the  $\wedge$ ,  $\vee$ , < or > button.
- ② Press the EXEC button.

### To return to the regular screen

Press the MENU button.

## 1-8. CONNECTIONS

To enable printing, video equipment to act as an input signal source, and a video monitor to enable you to view images or menus, must be connected. The following diagrams illustrate how to make the input, output and remote control connections. Use as a guide when connecting the necessary signals to and from the equipment to be used for printing.

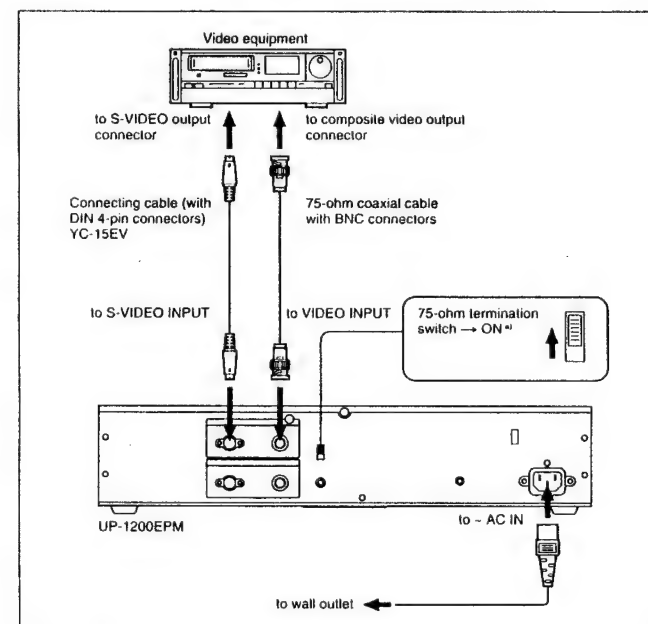
### Notes

When connecting:

- Turn off the power of each device before attempting to make any connections.
- Connect the AC power cord last.

## Making Connections for Storing Video Images

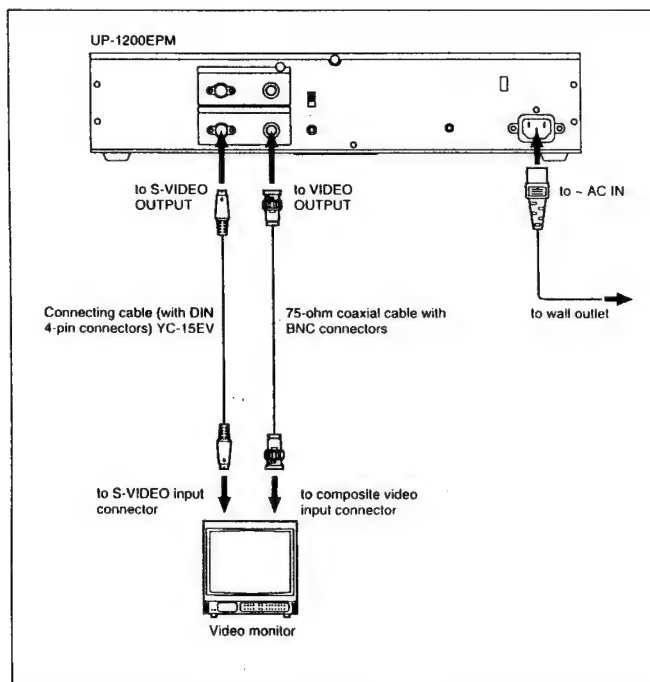
Connect the video equipment for storing the video images to be printed. Connect the necessary video equipment which will be used in actual printing, using the following diagram as a guide. Before connecting the video equipment, see "Important safeguards/notices for use in the medical environment" on page 2.



- Normally, set this switch to ON. Set it to OFF if the level of the input signal drops when you connect additional video equipment.

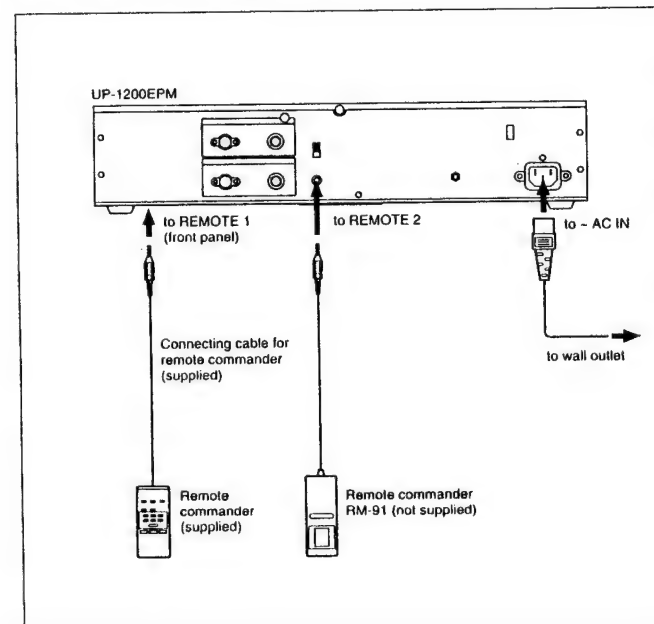
## Making Connections for Viewing Images to be Printed on the Video Monitor

Connect a video monitor to view stored images and to check those to be printed. Connect the necessary video monitor which will be used in actual printing, using the following diagram as a guide. Before connecting the video monitor, see “Important safeguards/notices for use in the medical environment” on page 2.



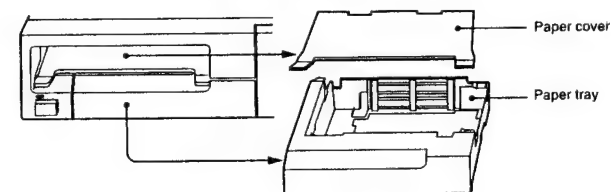
## Making Connections to Enable Remote Control

The printer can be controlled remotely by connecting the remote commander (supplied) or the RM-91 remote commander (not supplied) (see “Preparing the Remote Control Units” page 40).



## Assembly

Mount the supplied paper tray and paper cover.



## 1-9. PREPARING THE REMOTE CONTROL UNITS

You can control the printer remotely by using the remote commander (supplied) or the remote commander (not supplied).

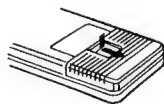
### Using the Supplied Remote Commander RM-5100

The remote commander can be used either as a wireless type or wired type. The buttons on the remote commander duplicate those on the front panel of the printer, except for the PRINT QTY button, COLOR ADJUST button and MULTI PICTURE button. (see "Remote Commander RM-5100" page 68)

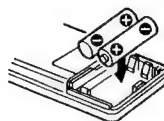
#### Inserting batteries

Install the batteries in the remote commander before using it as a wireless unit.

- 1 Remove the battery compartment cover.



- 2 Insert the two supplied 1.5 V batteries (R6).  
Note the polarity. Be careful to insert the batteries correctly.



- 3 Replace the cover.

#### Battery life

The battery life depends on how much you use the remote commander. On average, batteries last for about 6 months. Install fresh batteries as soon as you notice the unit's range becoming shorter.

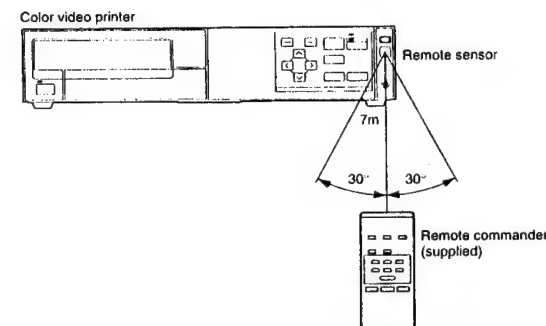
#### Notes

When using the batteries:

- Remove the batteries from the remote commander if you do not intend to use it for an extended period of time. The batteries may leak if you leave them in the remote control unit.
- Should the batteries leak, clean the battery case thoroughly with a soft cloth and install fresh batteries.
- Be careful to insert the batteries correctly. Note the polarity, as indicated inside the battery compartment.
- Replace exhausted batteries with fresh ones. Never mix a fresh battery with a used battery or with a different kind of battery.

### Using the supplied remote commander as a wireless unit

When using the remote commander as a wireless unit, aim the head of the remote control unit of the remote sensor on the printer. With fresh batteries, the range of the remote commander is about 7 meters.



### Using the Remote Commander (Not Supplied)

The RM-91 remote commander (not supplied) allows you to make printouts remotely.

#### Operation

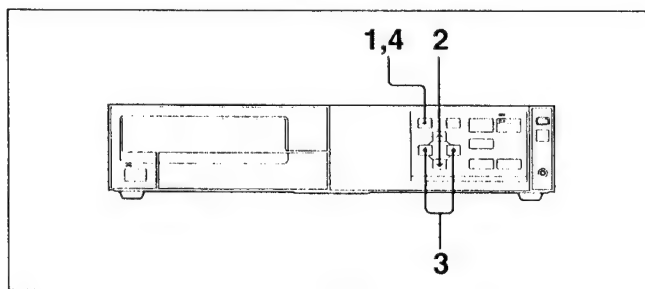
At the instant when the image you want to print is displayed on the monitor, press the switch of the remote commander. The subsequent operation of the printer will depend on the remote operation setting with the corresponding menu. (see "Selecting the Operation Mode for Automatic Printing Capabilities" page 52) The printer operation, also, can be controlled remotely by sending a pulse signal to the REMOTE 2 connector. (see "Specifications" page 61)

## 1-10. ADJUSTING THE PRINTOUT QUALITY

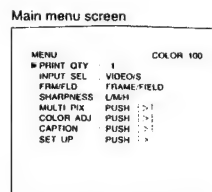
You can adjust the printout quality, including its sharpness and color (intensity and contrast) and store these settings by using the menu. The setting remains as is until reset - even if you turn off the power.

### Adjusting the Sharpness

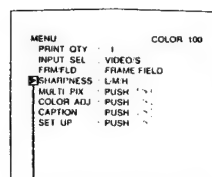
You can set the printout sharpness to one of three levels: L (Low), M (Medium) or H (High). A printout will appear softer or sharper depending on the definition of the subject outline. The image on the monitor is not affected by changing the sharpness setting. This adjustment affects only the quality of the printout. The setting remains as is until reset - even if you turn off the power.



- 1 Press the MENU button.  
The right screen appears.



- 2 Select SHARPNESS by pressing the  $\Delta$  or  $\nabla$  button.



Move the cursor to SHARPNESS by pressing the  $\Delta$  or  $\nabla$  button.

- 3 Select desired sharpness by pressing the  $<$  or  $>$  button.

Desired sharpness	Content of settings
L (Low)	Soft outline
M (Medium)	Normal outline
H (High)	Sharp outline



Switch the desired sharpness to green by pressing the  $<$  or  $>$  button.

- 4 Press the MENU button.  
The regular screen appears.

### Adjusting the Printout Color

This subsection explains how to adjust the printout color. You can adjust the color intensity (RED/GREEN/BLUE) and contrast (DARK/LIGHT). The new setting remains as is until reset - even if you turn off the power.

You can store up to three settings. These settings are managed according to a LOAD number. The color intensity and picture contrast of a printout are determined by recalling one of the three settings according to their LOAD numbers. The printer retains these settings even if you turn off the power. This is useful when you are using more than one video equipment, each of a different quality, and when you want to print images having different color qualities and picture contrasts.

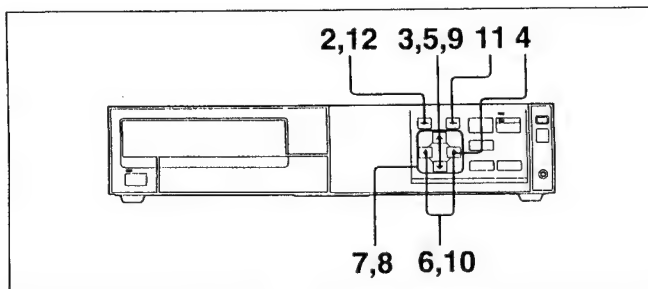
Also, you can make a printout using temporarily set values, without erasing the stored adjustment values.

Perform the adjustments while viewing the images stored in memory. All values are factory-set to 0 for LOAD numbers 1, 2 and 3.

#### When you control the printer using the remote commander (supplied)

You can directly access the COLOR ADJUST sub menu from the regular screen by pressing the COLOR ADJUST button on the remote commander. Therefore, press the COLOR ADJUST button first. Then, perform the operation from step 5 of the following procedure.

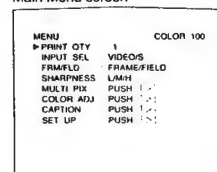
Continue to next page  $\rightarrow$



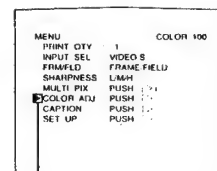
1 Display the image stored in monitor for adjustment.

2 Press the MENU button.  
The right screen appears.

Main Menu screen



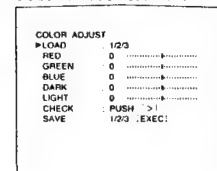
3 Select COLOR ADJ by pressing the  $\Delta$  or  $\nabla$  button.



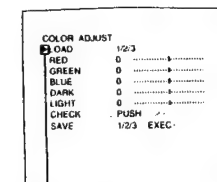
Move the cursor to COLOR ADJ by pressing the  $\Delta$  or  $\nabla$  button.

4 Press the  $\rightarrow$  button.  
The right screen appears.

COLOR ADJUST sub menu



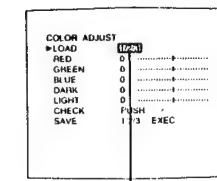
5 Select LOAD by pressing the  $\Delta$  or  $\nabla$  button.



Move the cursor to LOAD by pressing the  $\Delta$  or  $\nabla$  button.

6 Select the LOAD number of the value to be adjusted or to be modified by pressing the  $<$  or  $>$  button.

When modifying, you can preserve the original settings. (see "To preserve the original set value" page 47)



Switch the desired LOAD number to green by pressing the  $<$  or  $>$  button

7 Adjust the printout color.

- ① Select the item to be set by pressing the  $\Delta$  or  $\nabla$  button.
- ② Perform the adjustment by pressing the  $<$  or  $>$  button.

Adjustment item		Contents of setting
Color intensity	RED	Adjusting the red component of the image
	GREEN	Adjusting the green component of the image
	BLUE	Adjusting the blue component of the image
Color contrast	DARK	Adjusting the dark area of the image
	LIGHT	Adjusting the light area of the image

The RED, GREEN and BLUE color components and the contrast are divided into 15 scales from -7 to +7, as indicated by a value and graph. And the center of the graph corresponds to the standard color.

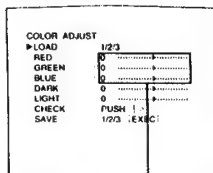
**Note**

There is an unusable extra scale at the left end on the COLOR ADJUST sub menu.

Continue to next page  $\rightarrow$



### When adjusting RED/ GREEN/BLUE



The intensity increases in the + direction by pressing the > button. The intensity decreases in the - direction by pressing the < button.

### Once you have changed the value

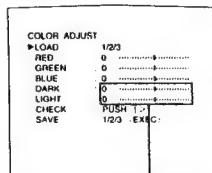
Once you have changed the value, TEMP (TEMPORARY) appears to the right of the LOAD item. TEMP indicates that the setting is temporary and not stored.

- 8 After you have made all necessary adjustments, check your presettings.
  - ① Select CHECK by pressing the  $\Delta$  or  $\nabla$  button.
  - ② Press the > button.  
For as long as you keep the > button held down, the display does not appear on the screen.

You can make a printout with the settings made as above. Go to step 12 to make a printout. However, this setting is cleared when you turn the printer off or you select another preset. To store a new setting, go to the next step.

- 9 Select SAVE by pressing the  $\Delta$  or  $\nabla$  button.

### When adjusting DARK/ LIGHT



The contrast in the dark area or light area is strengthened in the + direction by pressing the > button. The contrast in the dark area or light area is weakened in the - direction by pressing the < button.

- 10 Select the SAVE number to which new settings are to be stored by pressing the < or > button.

### To preserve the original set value

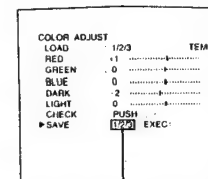
Select the SAVE number which differs from the LOAD number selected in step 6.

- 11 Press the EXEC button.  
The settings have been registered to the SAVE number selected in step 10.  
TEMP disappears from the LOAD item.

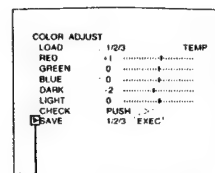
- 12 Press the MENU button.  
The regular screen appears.

### To recall settings

You can recall previously set values by selecting the LOAD number. The values are stored to SAVE numbers in steps 10 and 11. This SAVE number is the LOAD number for this setting.



Switch the desired SAVE number to green by pressing the < or > button.



Move the cursor to SAVE by pressing the  $\Delta$  or  $\nabla$  button.

## 1-11. PRINTER INITIAL SETUP

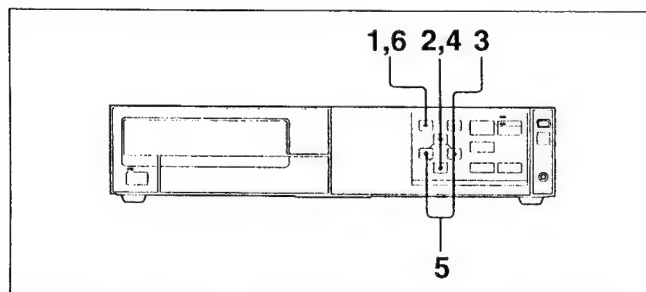
You can set up the following, using the on-screen menu.

- Setting the printout size (see page 48)
- Changing the printout area (see page 50)
- Selecting the operation mode for automatic printing capabilities (see page 52)
- Erasing the screen display (see page 54)
- Viewing images from connected video equipment on the video monitor (see page 56)

### Setting the Printout Size

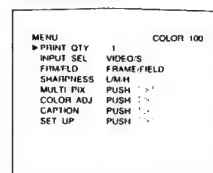
When you print an image that is narrower or wider than the standard screen size, the black frame may be printed or the image may be partially cut. In such a case, you can change the screen size.

The printer supports the following three sizes, NA (NARROW), NO (NORMAL) and W (WIDE).

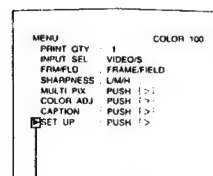


- 1 Press the MENU button.  
The right screen appears.

Main Menu screen



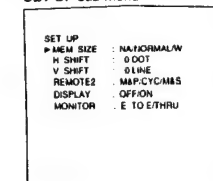
- 2 Select SET UP by pressing the  $\Delta$  or  $\nabla$  button.



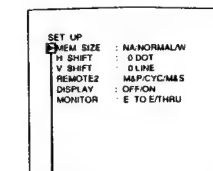
Move the cursor to SET UP by pressing the  $\Delta$  or  $\nabla$  button.

- 3 Press the  $>$  button.  
The right screen appears.

SET UP sub menu

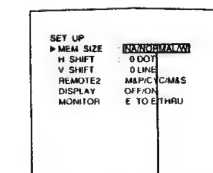


- 4 Select MEM SIZE by pressing the  $\Delta$  or  $\nabla$  buttons.



Move the cursor MEM SIZE by pressing the  $\Delta$  or  $\nabla$  button.

- 5 Select the desired size by pressing the  $<$  or  $>$  buttons.



Switch the selected size to green.  
The selected size appears in green.

When changing	Printout size	Size (dots $\times$ line)
When a black frame is printed	NA (NARROW)	708 (H) $\times$ 448 (V)
Normal	NO (NORMAL)	720 (H) $\times$ 472 (V)
When an image is partially cut	W (WIDE)	772 (H) $\times$ 488 (V)

- 6 Press the MENU button.  
The regular screen appears.

#### Note

To change the printout size, turn the power off after removing from the SET UP sub menu (after completing step 6 in the above operation procedures). If you keep the power on, the former setting remains.

#### To check the adjustment result

Any black frame is also stored in memory with the previous image. Thus, store a new image to the memory and print it to check whether the black frame disappears.

## Changing the Printout Area

The black line may be printed on the printout although it does not appear on the video monitor. The portion where no video signal exists is printed in black. This may occur when you make printouts after you connect a different video source or play back different video software. In such a case, you can adjust the printout area by moving the screen horizontally and vertically.

When the black line is on the right



When the black line is on the left



When the black line is at the top

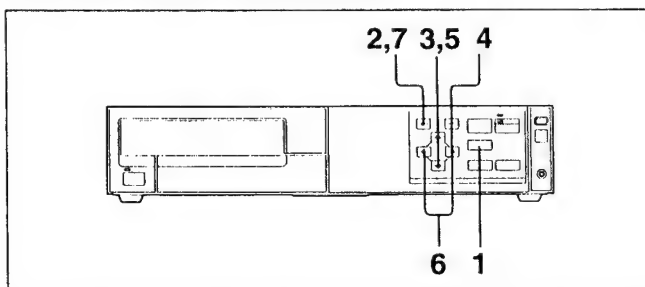


When the black line is at the bottom



### Note

When the printout size is set to WIDE, the screen size cannot be adjusted vertically. (see "Setting the Printout Size" page 48)



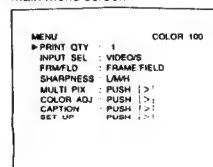
**1** When the memory image is displayed on the screen, press the SOURCE/MEMORY button.

The image from the video source appears.

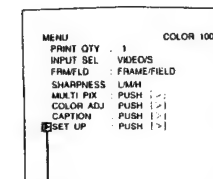
**2** Press the MENU button.

The right screen appears.

Main Menu screen



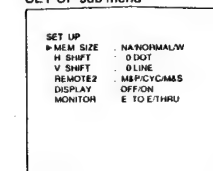
**3** Select SET UP by pressing the  $\wedge$  or  $\vee$  button.



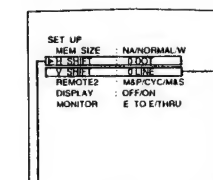
Move the cursor to SET UP by pressing the  $\wedge$  or  $\vee$  button.

**4** Press the  $>$  button.  
The right screen appears.

SET UP sub menu



**5** Select H SHIFT by pressing the  $\wedge$  or  $\vee$  buttons, when the black line appears on the right or left. Select V SHIFT by pressing the  $\wedge$  or  $\vee$  buttons, when the black line is at the top or bottom.



When the black line is on the right or left

When the black line is at the top or at the bottom

**6** Adjust the horizontal value or vertical value by pressing the  $<$  or  $>$  button.

Item selected in step 5	The position where the black line appears	Button to be used	Operation
H SHIFT (horizontal direction)	On the right	$>$ button	Shifting the image to the right by up to 14 dots in step 2 dots
	On the left	$<$ button	Shifting the image to the left by up to 14 dots in step 2 dots
V SHIFT (vertical direction)	At the top	$>$ button	In frame mode, shifting the image up by up to 6 lines in step 2 lines In field mode, shifting the image up by up to 3 lines in step 1 line.
	At the bottom	$<$ button	In frame mode, shifting the image down by up to 6 lines in step 2 lines In field mode, shifting the image down by up to 3 lines in step 1 line.

**7** Press the MENU button.  
The regular screen appears.

Continue to next page  $\rightarrow$

### To check the adjustment result

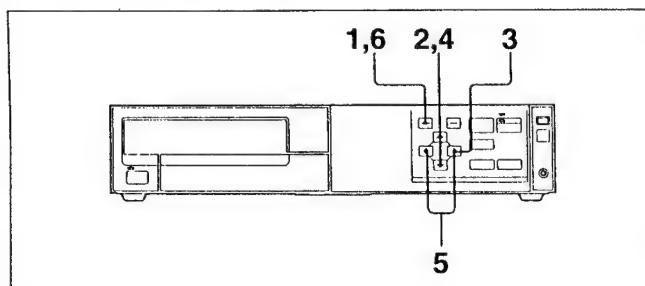
Any black line is also stored in memory with the previous image. Thus, store a new image to the memory and print it to check whether the black line disappears.

#### Note

When a black line still remains even after adjusting H SHIFT or V SHIFT, change the printout size. (see "Setting the Printout Size" page 48)

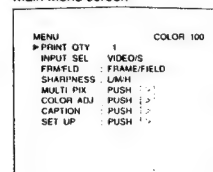
## Selecting the Operation Mode for Automatic Printing Capabilities

You can control the printer with the RM-91 remote commander connected to the REMOTE 2 connector on the rear panel. In addition to the above, the printer can be remotely controlled by the pulse signal input to REMOTE 2. (see page 61)

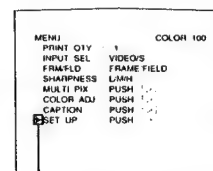


- 1 Press the MENU button.  
The right screen appears.

Main Menu screen



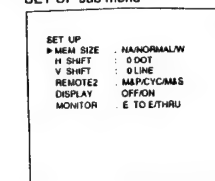
- 2 Select SET UP by pressing the  $\Delta$  or  $\nabla$  button.



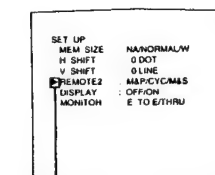
Move the cursor to SET UP by pressing the  $\Delta$  or  $\nabla$  button.

- 3 Press the  $>$  button.  
The right screen appears.

SET UP sub menu

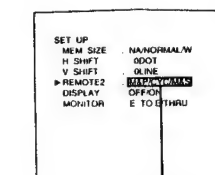


- 4 Select REMOTE 2 by pressing the  $\Delta$  or  $\nabla$  button.



Move the cursor to REMOTE 2 by pressing the  $\Delta$  or  $\nabla$  button.

- 5 Select the desired operation method by pressing the  $<$  or  $>$  button.



Switch the desired operation method to green.

Type of control operation	Operation method
M & P (MEMORY & PRINT)	Storing an image into memory page and printing memory image. When the printer starts printing, the memory page is changed when FLD is selected.
CYC (CYCLIC MEMORY)	Storing images to memory page cyclically whenever you press the switch of the remote commander. The printer continues to store images, replacing previously stored images with the new one.
M & S (MEMORY & STOP)	Storing an image to memory page whenever you press the switch of the remote commander. The printer stops storing images to memory page once images have been stored to all memory pages. The Message STOP STOP STOP appears.

- 6 Press the MENU button.  
The regular screen appears.

Continue to next page  $\rightarrow$

### To make the message STOP STOP STOP disappear

When the message STOP STOP STOP is displayed on the video monitor, buttons except the STOP button become disable to operate.

Press the STOP button. The printer is reset to the normal printing mode.

### Using the remote commander effectively

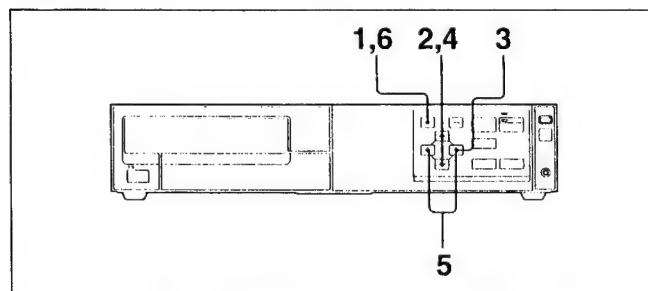
This function is effective when you store four reduced images or 16 reduced images. Whenever you press the switch of the remote commander, the image is stored into each position. For example, when M & P is selected with setting to store four reduced images, the printer stores fourth reduced image and starts to make a printout of four reduced images at fourth time switch pressing.

#### Note

If frame mode is selected, the printer does not store any image even thou you press the switch of the remote commander when the printer is printing.

## Erasing the Screen Display

You can erase a screen display with the menu, when, for example, it is hard to see the image that is hidden behind the screen display (C, QTY, VIDEO, and others). The printer operation is identical, regardless of whether messages are displayed on the screen.



- 1 Press the MENU button.  
The right screen appears.

Main Menu screen

MENU	PRINT QTY	1	COLOR 100
INPUT SEL	VIDEO'S		
FRAMFLD	FRAME/FIELD		
SHARPNESS	LAMB		
MULTI PIX	PUSH	<>	
COLOR ADJ	PUSH	<>	
CAPTION	PUSH	<>	
SET UP	PUSH	<>	

- 2 Select SET UP by pressing the ^ or v button.

MENU	PRINT QTY	1	COLOR 100
INPUT SEL	VIDEO'S		
FRAMFLD	FRAME/FIELD		
SHARPNESS	LAMB		
MULTI PIX	PUSH	<>	
COLOR ADJ	PUSH	<>	
CAPTION	PUSH	<>	
SET UP	PUSH	<>	

Move the cursor to SET UP by pressing the ^ or v button.

- 3 Press the > button.  
The right screen appears.

SET UP sub menu

SET UP	MEM SIZE	NA/NORMAL/W
H SHIFT	Q DOT	
V SHIFT	O LINE	
REMOTEZ	MAP/CYC/MAS	
DISPLAY	OFF/ON	
MONITOR	E TO E/THRU	

- 4 Select DISPLAY by pressing the ^ or v button.

SET UP	MEM SIZE	NA/NORMAL/W
H SHIFT	Q DOT	
V SHIFT	O LINE	
REMOTEZ	MAP/CYC/MAS	
DISPLAY	OFF/ON	
MONITOR	E TO E/THRU	

Move the cursor to DISPLAY by pressing the ^ or v button.

- 5 Select OFF by pressing the < or > button.

SET UP	MEM SIZE	NA/NORMAL/W
H SHIFT	Q DOT	
V SHIFT	O LINE	
REMOTEZ	MAP/CYC/MAS	
DISPLAY	OFF/ON	
MONITOR	E TO E/THRU	

Switch to green.

To display screen message  
In step 5, select ON.

#### Note

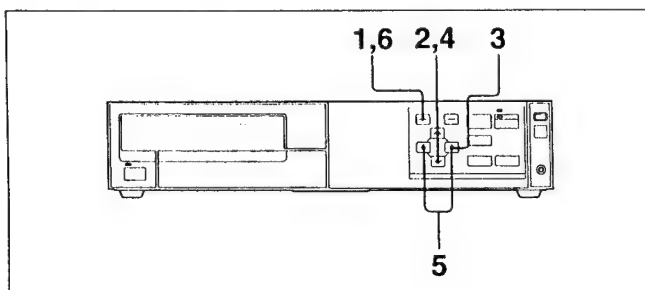
If you set the printer output signal specification to THRU (through), screen display do not appear, even when you switch ON to green.

- 6 Press the MENU button.  
The regular screen appears.

## Viewing Images from Connected Video Equipment on the Video Monitor

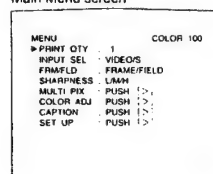
You can view images of the signals from connected video equipment without processed in the video printer.  
The printer outputs either of two kinds of video signals according to the MONITOR setting of the SET UP menu.  
E TO E: Signals are output to the monitor after being processed by the printer's circuitry.  
THRU (through): Signals are output to the monitor as is.

At the factory, the printer is set to E TO E. By changing to THRU, you can view the image with good quality without signal-processed in the printer.

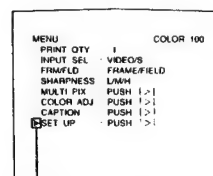


- 1 Press the MENU button.  
The following screen appears.

Main Menu screen



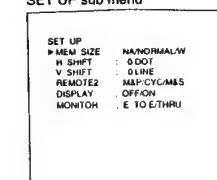
- 2 Select SET UP by pressing the  $\Delta$  or  $\nabla$  button.



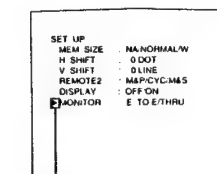
Move the cursor to SET UP by pressing the  $\Delta$  or  $\nabla$  button.

- 3 Press the  $>$  button.  
The right screen appears.

SET UP sub menu

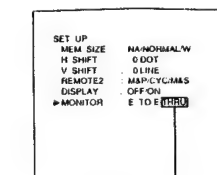


- 4 Select MONITOR by pressing the  $\Delta$  or  $\nabla$  button.



Move the cursor to MONITOR by pressing the  $\Delta$  or  $\nabla$  button.

- 5 Select THRU by pressing the  $<$  or  $>$  button.



Switch to green.

- 6 Press the MENU button.  
The regular screen appears.  
The image of the signal directly from the signal source (connected video equipment), which does not pass through the printer circuit, is displayed on the video monitor.

### Note

When menu or screen display appears on the video monitor, the memory image is displayed on the monitor. Display the image from the video equipment on the video monitor by pressing the SOURCE/MEMORY button.

### When the color of the video monitor is not correctly adjusted

Adjust the color of the video monitor by using the video monitor controls.

## 1-12. ERROR MESSAGES

If a problem occurs, the ALARM lamp lights in orange and an error message and warning message stating the problem appears on the monitor. This section lists messages in alphabetical order, together with their possible causes and remedies. Note the message and act accordingly.

Error/warning message	Possible causes and remedies
CHECK RIBBON SETTING	The front panel (on the right from the user's standpoint) opens accidentally during printing. — Close the front panel. (see page 9)
FEED ERROR	The paper jams as it is being fed into the ribbon area around the paper tray. — Remove the jammed paper from the printer. (see page 63)
HEAD IN COOLING	The thermal head has overheated. — Leave the printer idle and until the head cools and this message disappears.
NO CARTRIDGE	The ink ribbon cassette is not correctly installed. (see page 8) — Insert the ink ribbon cassette correctly.
NO PAPER	The paper has been exhausted. — Load paper. (see page 10)
PREHEATING	The thermal head is preheating. — Leave the printer until the head has preheated and this message disappears.
REMOVE PRINTS	The paper has jammed near the paper cover. — Remove the jammed paper from the printer. (see page 63)
REMOVE STUCK PAPER	The paper has jammed during printing. — Remove the jammed paper from the printer. (see page 63)
RIBBON & PAPER MISMATCH	The ink ribbon cassette and paper are not compatible. — Use a compatible cassette/paper combination. (see page 60)
RIBBON DOOR OPEN	The front panel (on the right from the user's standpoint) is open. — Close the front panel. (see page 9)
RIBBON END	The ink ribbon cassette has been exhausted. — Insert a new ribbon. (The ink ribbon cassette cannot be reused.) (see page 8)
RIBBON ERROR	An ink ribbon cassette that cannot be used with this printer has been loaded. — Insert the appropriate ink ribbon cassette. (see page 60)

**If the message is not cleared, even after completing the necessary remedy**  
If, after completing the remedy given in "Error Messages", the message is not cleared from the video monitor, turn the printer's power off, then back on again. This should allow the printer to again be operated normally.

### If ERRORxx appears

If the message "ERROR xx" (xx = error number) appears, perform the following.

- 1 Turn off the power of the printer.
- 2 Remove the ink ribbon cassette, paper cover and paper tray, and check for any paper jams inside the printer.  
(see "Loading an Ink Ribbon Cassette" page 8 and "Loading Paper" page 10)

If you find any jammed paper, remove it carefully.

**If the ink ribbon cassette cannot be removed, or the jammed paper cannot be removed, contact your Sony service facility.**

- 3 Insert the ink ribbon cassette, paper cover and paper tray to the printer.
- 4 Turn on the power of the printer.

When the message does not appear, you can use the printer as normal. However, the image stored to memory will have been cleared. Store the image to memory again.

**If the same message appears again, the printer must not be operated. Turn off the power immediately and contact your Sony service facility.**

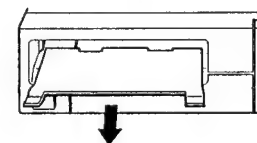
### If the Paper Jams

If the paper jams as it is being fed into the ribbon area during printing, or when being fed into the paper cover area, printing stops and a message appears on the monitor, according to where the jam has occurred.

Message	Position where the paper has jammed
FEED ERROR	Before printing and being fed into the ribbon area
REMOVE STUCK PAPER	During printing, inside the printer
REMOVE PRINTS	Instantaneously before completing printing, near the paper cover

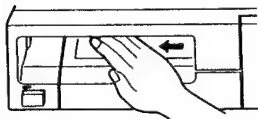
### When FEED ERROR appears

- 1 Remove the paper cover.  
When any printouts have been ejected on the paper cover, remove those printouts first before removing the paper cover.

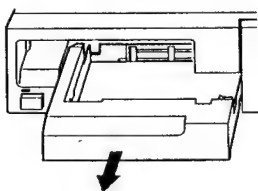


Continue to next page →

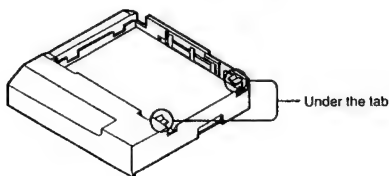
- 2** Check whether any paper is stuck inside the printer. If you find a jammed sheet, slowly pull it into the paper tray.



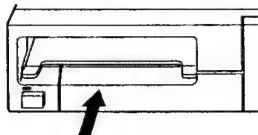
- 3** Push PUSH on the paper tray to remove it.



- 4** Load the paper into the paper tray correctly.  
Discard the paper removed in step 2.



- 5** Slide the paper tray and paper cover back into the printer.



#### When REMOVE STUCK PAPER appears

Perform the same operation as that performed when FEED ERROR appears. When you cannot remove the jammed paper, remove the ink ribbon cassette too. If you find a jammed sheet inside the printer, remove it carefully.

#### When REMOVE PRINTS appears

Carefully remove the jammed paper from near the paper cover.

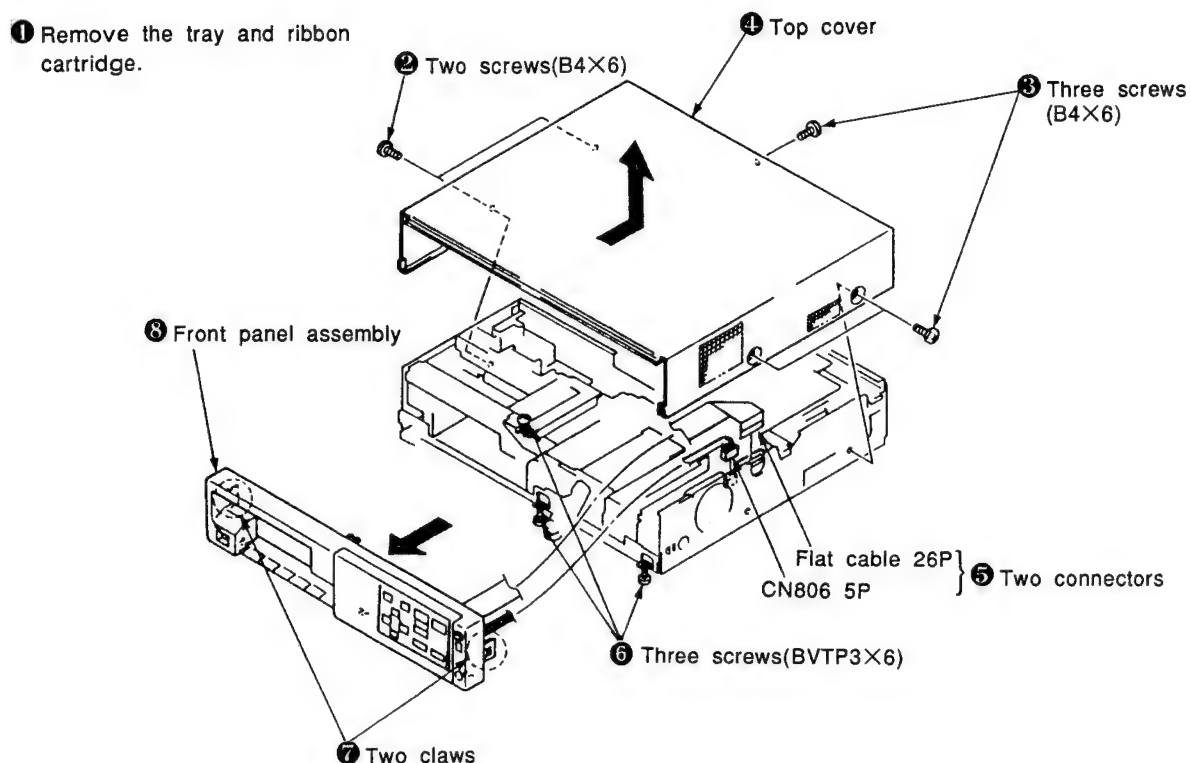
## 1-13. TROUBLESHOOTING

Symptom	Possible causes and remedies
Nothing appears on the monitor	<ul style="list-style-type: none"> <li>The POWER switch of the printer is not set to ON. → Set the POWER switch of the printer to ON.</li> <li>The POWER switch of the video monitor is not set to ON. → Set the POWER switch of the video monitor to ON.</li> <li>Connections may not be correct. → Make connections correctly. (see page 37)</li> </ul>
Any message does not appear on the regular screen.	<p>If an incorrect sync signal is input, nothing may appear on the video monitor.</p> <p>→ In this case, check the video monitor first by pressing the SOURCE/MEMORY button to display the image stored in memory. If an image appears, the video monitor is working correctly.</p> <p>Change the INPUT SELECT settings on the menu screen. (see page 12)</p> <p>Or, set the connected video equipment to playback mode, if it is in another mode such as stop mode.</p>
Any message and image do not appear on the regular screen.	<p>If an image stored in memory appears when the SOURCE/MEMORY button is pressed, the MONITOR settings on the SET UP sub menu is set to THRU.</p> <p>Change the MONITOR settings to E TO E. (see page 57)</p>
The printer does not print.	An error message appears on the display. (see page 62)
A black line appears on the printout.	<p>A portion corresponding to there being no signal is printed in black.</p> <p>→ Shift the printout area. (see page 50)</p> <p>Store a new image and print it.</p>
The printer makes a printout with black frame.	<p>A portion corresponding to there being no signal is printed in black.</p> <p>→ Change the printout size to make it narrow. (see page 48)</p> <p>Store a new image and print it.</p>
The printed image is partially cut out.	<p>Only a part of video signal has been stored.</p> <p>→ Change the printout size to make it wide. (see page 48)</p> <p>Store a new image and print it.</p>
A caption is not printed clearly.	<p>Printed in field mode.</p> <p>→ Store the image in frame mode and print it in frame mode.</p>
The printout is blurred.	<p>The quickly moving image has been stored in frame mode.</p> <p>→ Change the mode to field mode, then print it again.</p>

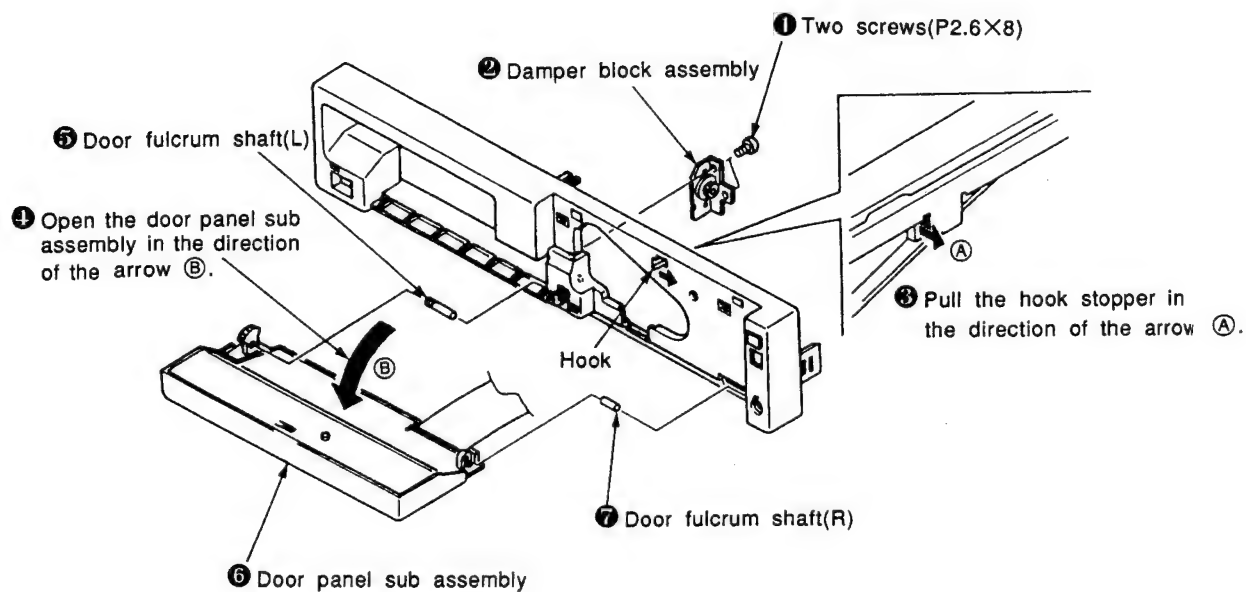


## SECTION 2 DISASSEMBLY

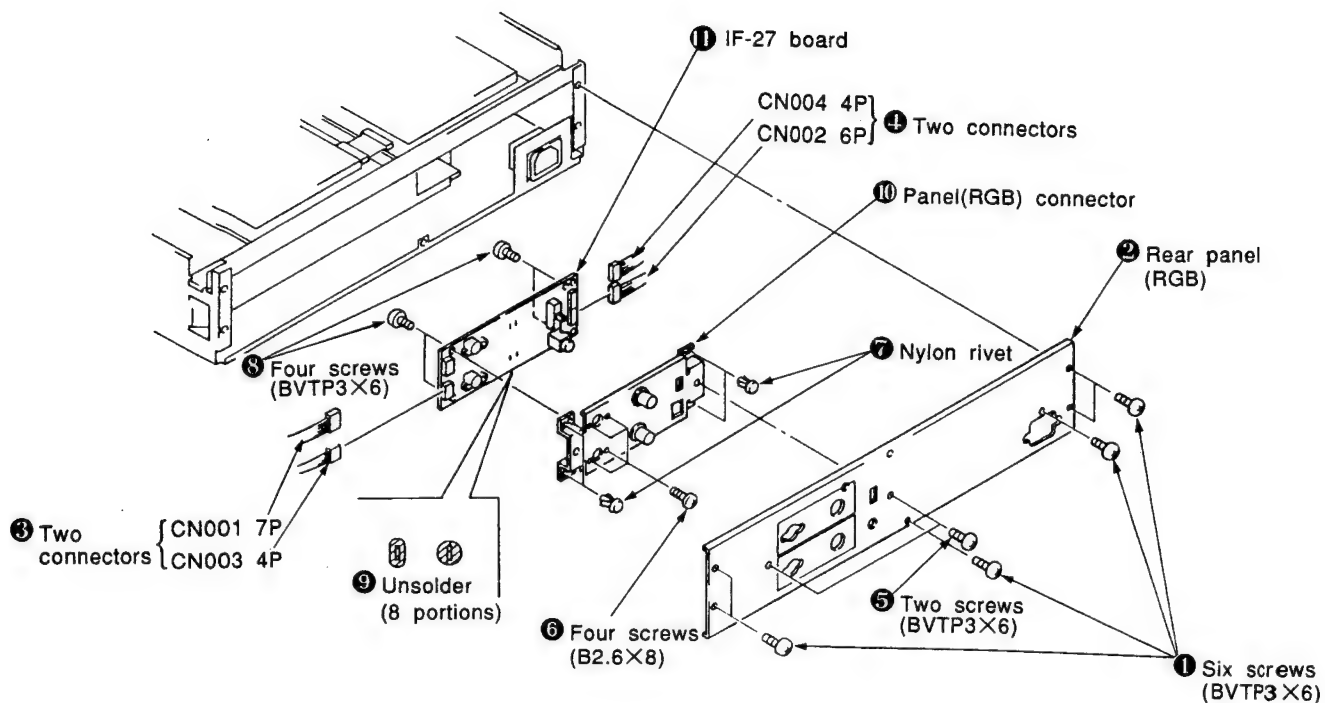
### 2-1. REMOVAL OF CABINET ASSEMBLY



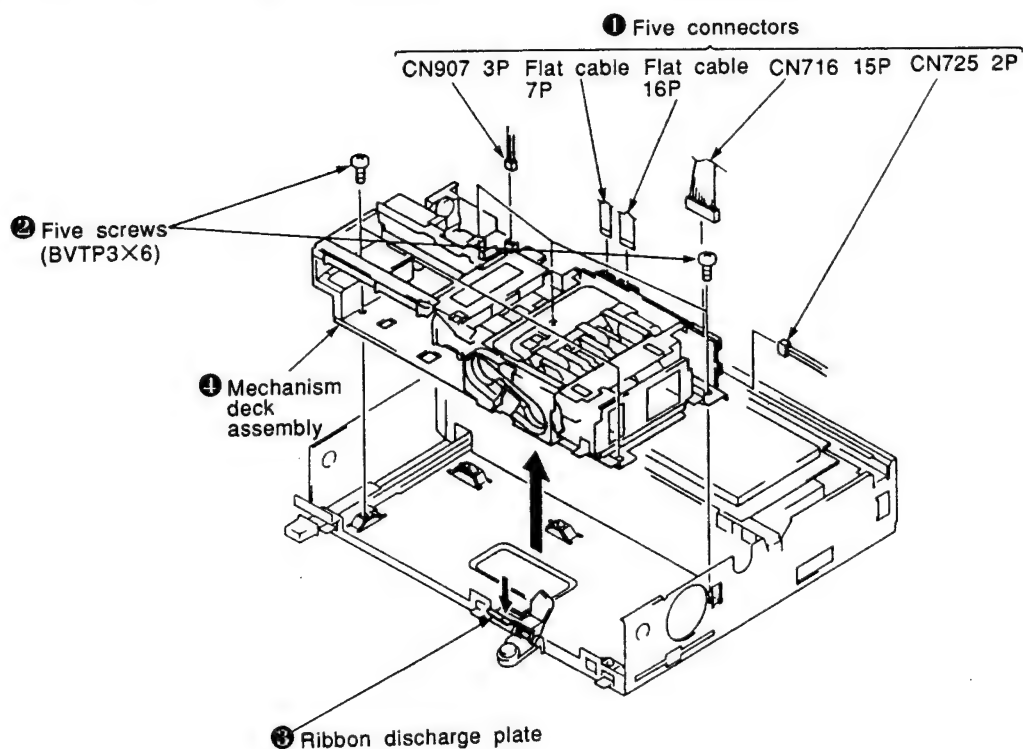
### 2-2. REMOVAL OF DOOR PANEL SUB ASSEMBLY



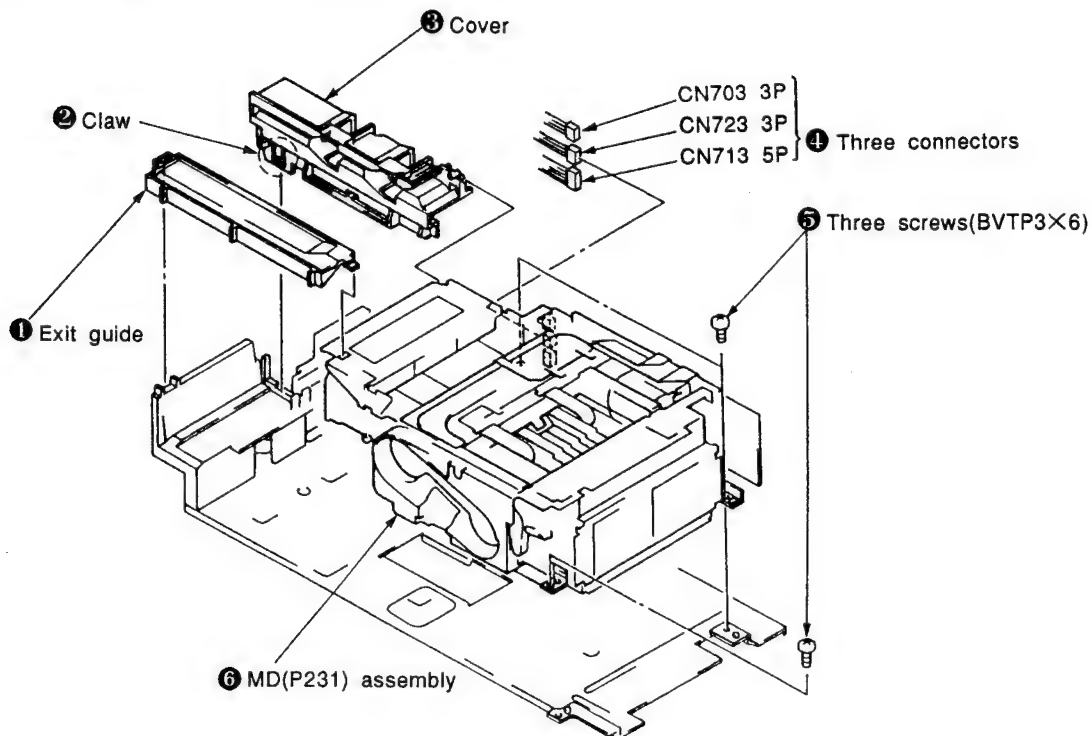
## 2-3. REMOVAL OF IF-27 BOARD



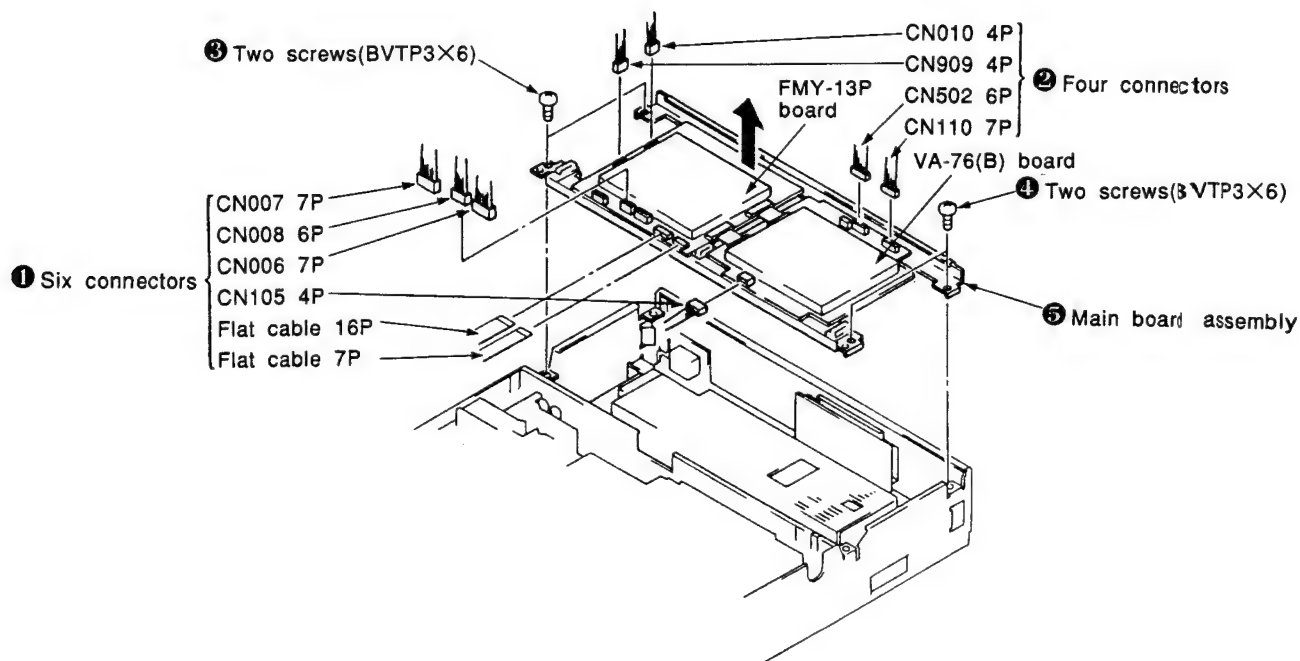
## 2-4. REMOVAL OF MECHANISM DECK ASSEMBLY



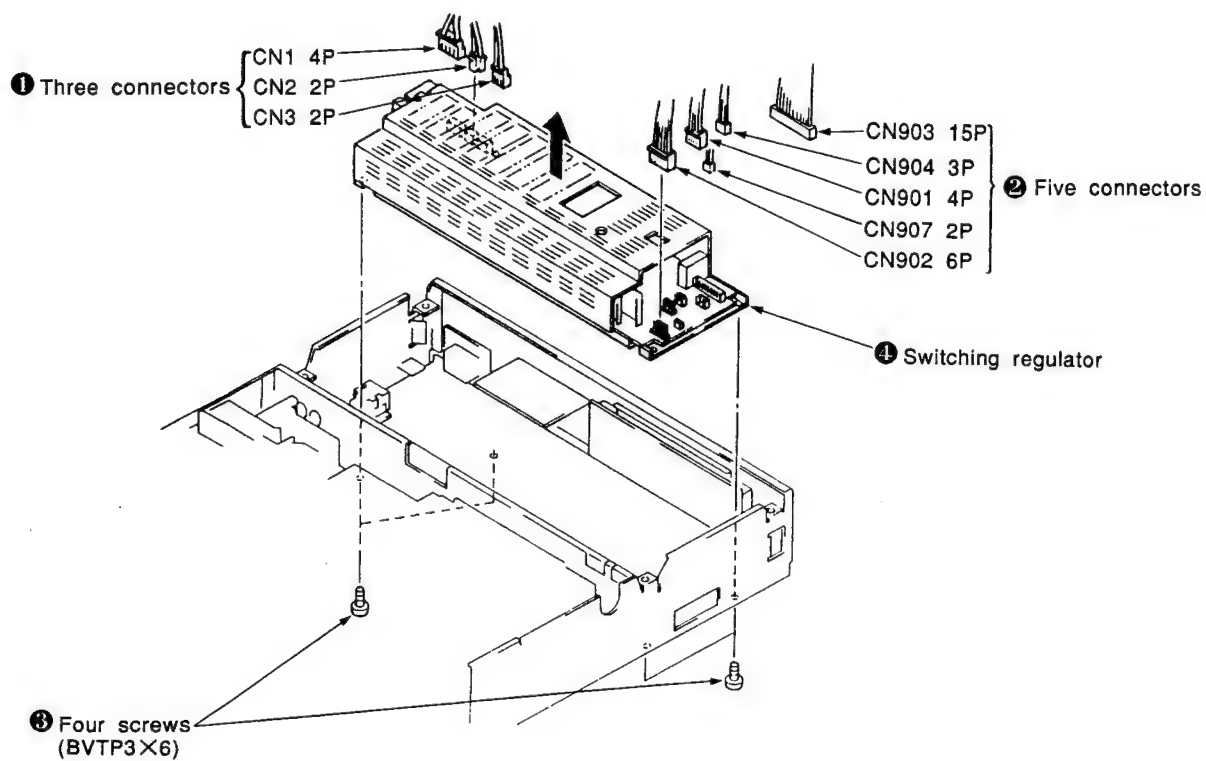
## 2-5. REMOVAL OF MD (P231) ASSEMBLY



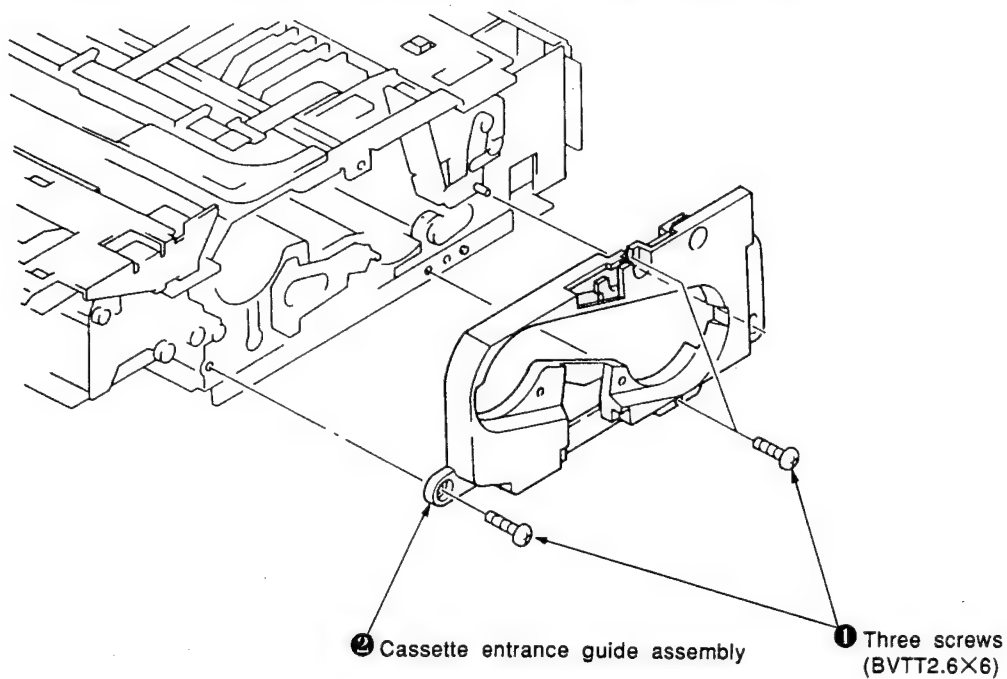
## 2-6. REMOVAL OF MAIN BOARD (FMY-13P BOARD, VA-76(B) BOARD) ASSEMBLY



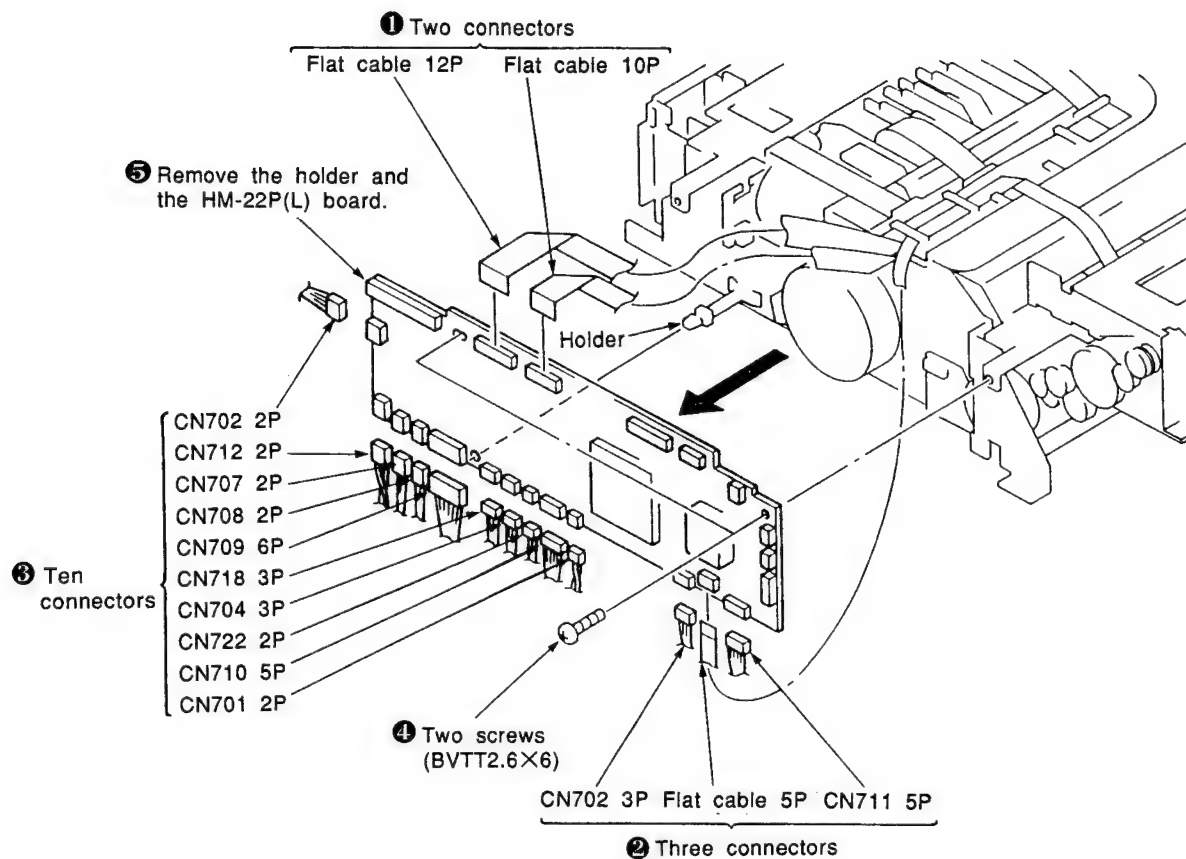
## 2-7. REMOVAL OF SWITCHING REGULATOR



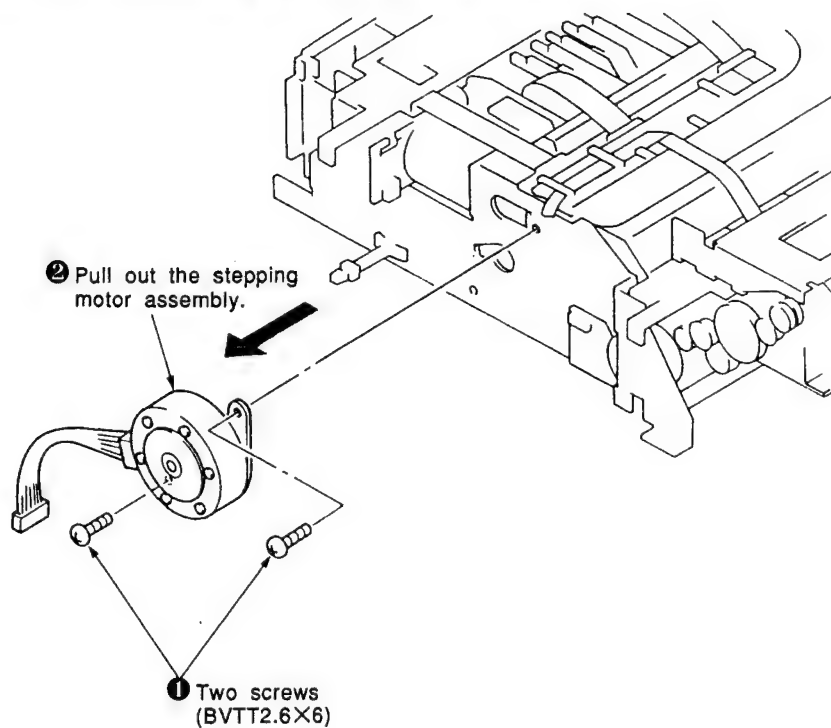
## 2-8. REMOVAL OF CASSETTE ENTRANCE GUIDE ASSEMBLY



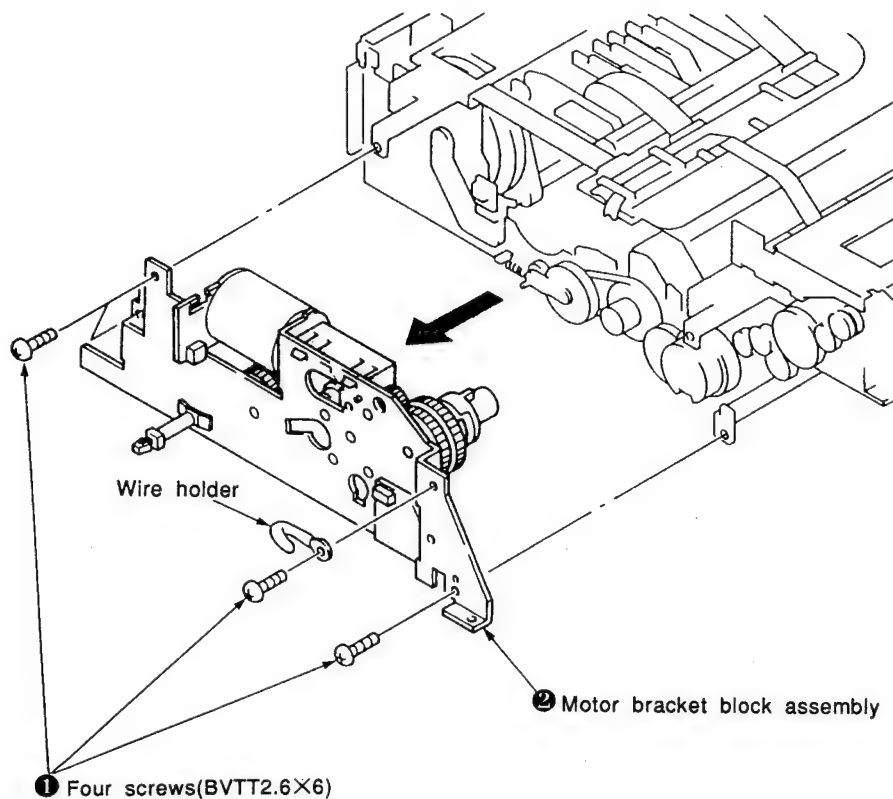
## 2-9. REMOVAL OF HM-22P(L) BOARD



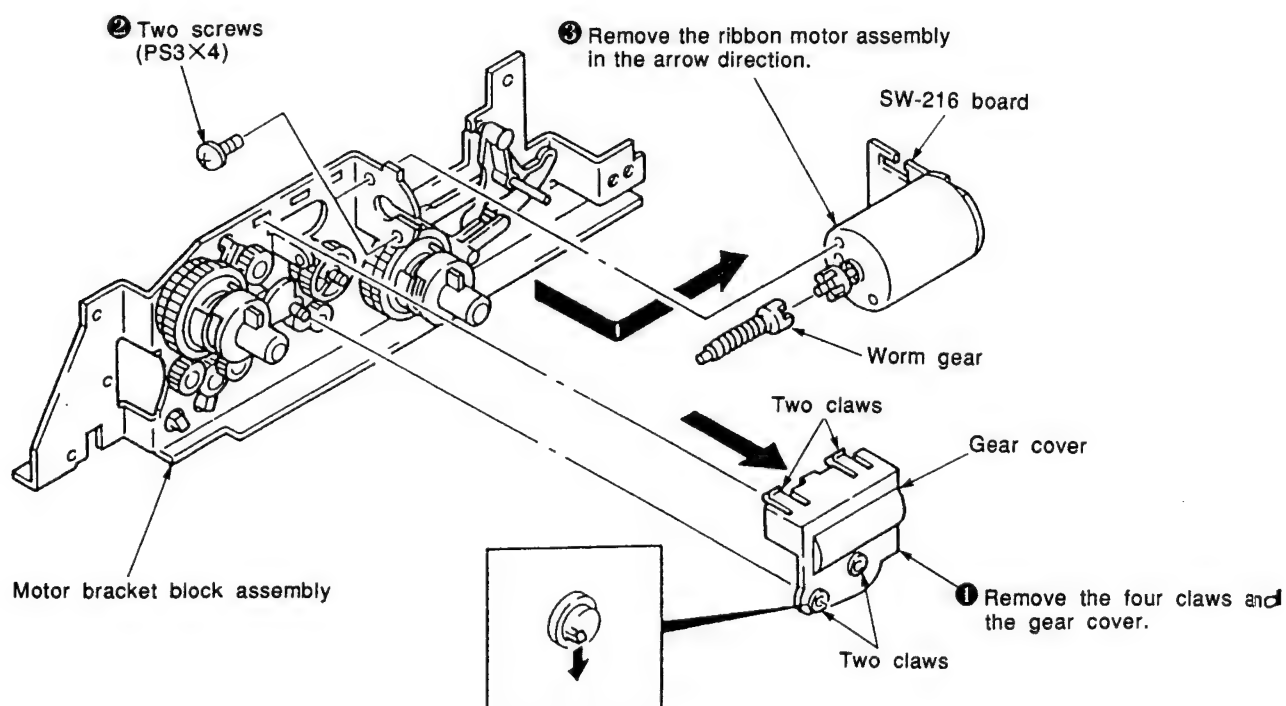
## 2-10. REMOVAL OF STEPPING MOTOR ASSEMBLY



## 2-11. REMOVAL OF MOTOR BRACKET BLOCK ASSEMBLY

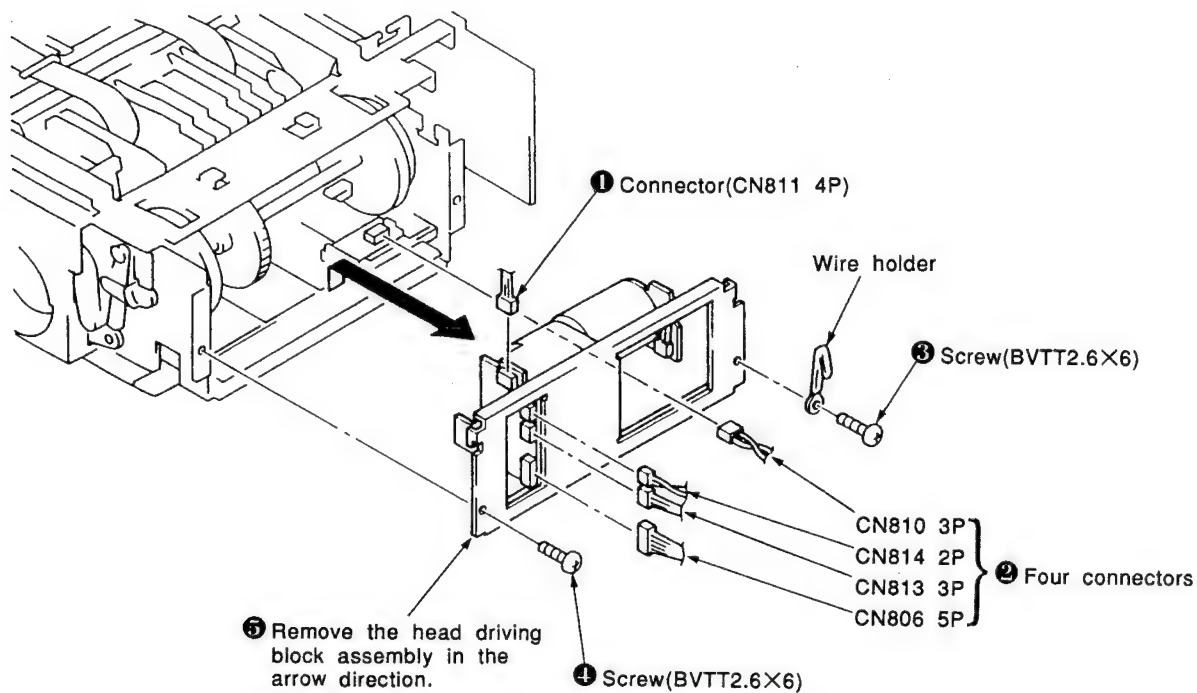


## 2-12. REMOVAL OF RIBBON MOTOR ASSEMBLY

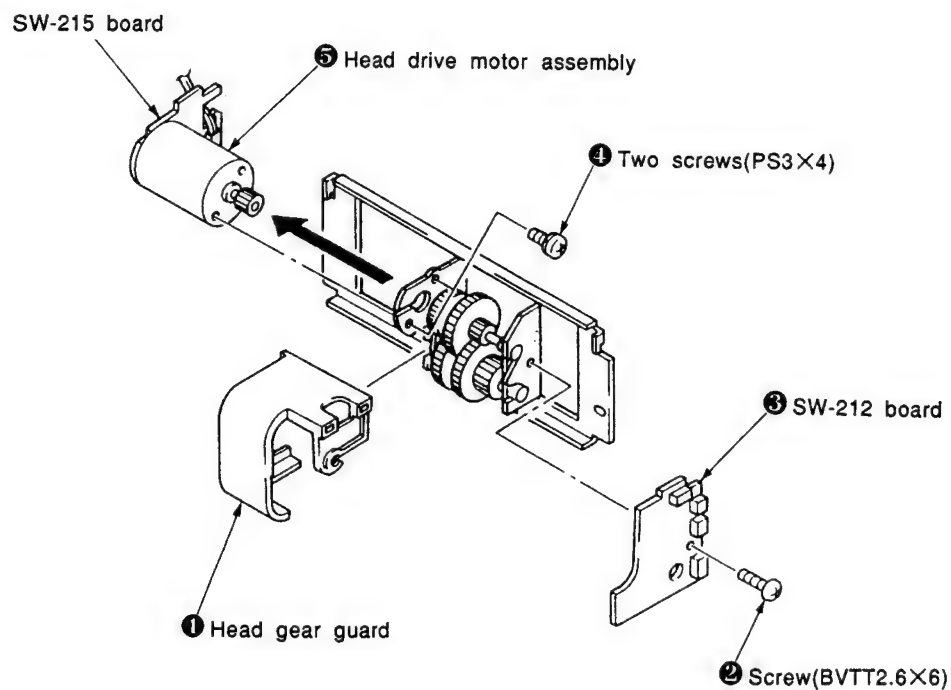


## 2-13. REMOVAL OF HEAD DRIVING BLOCK ASSEMBLY

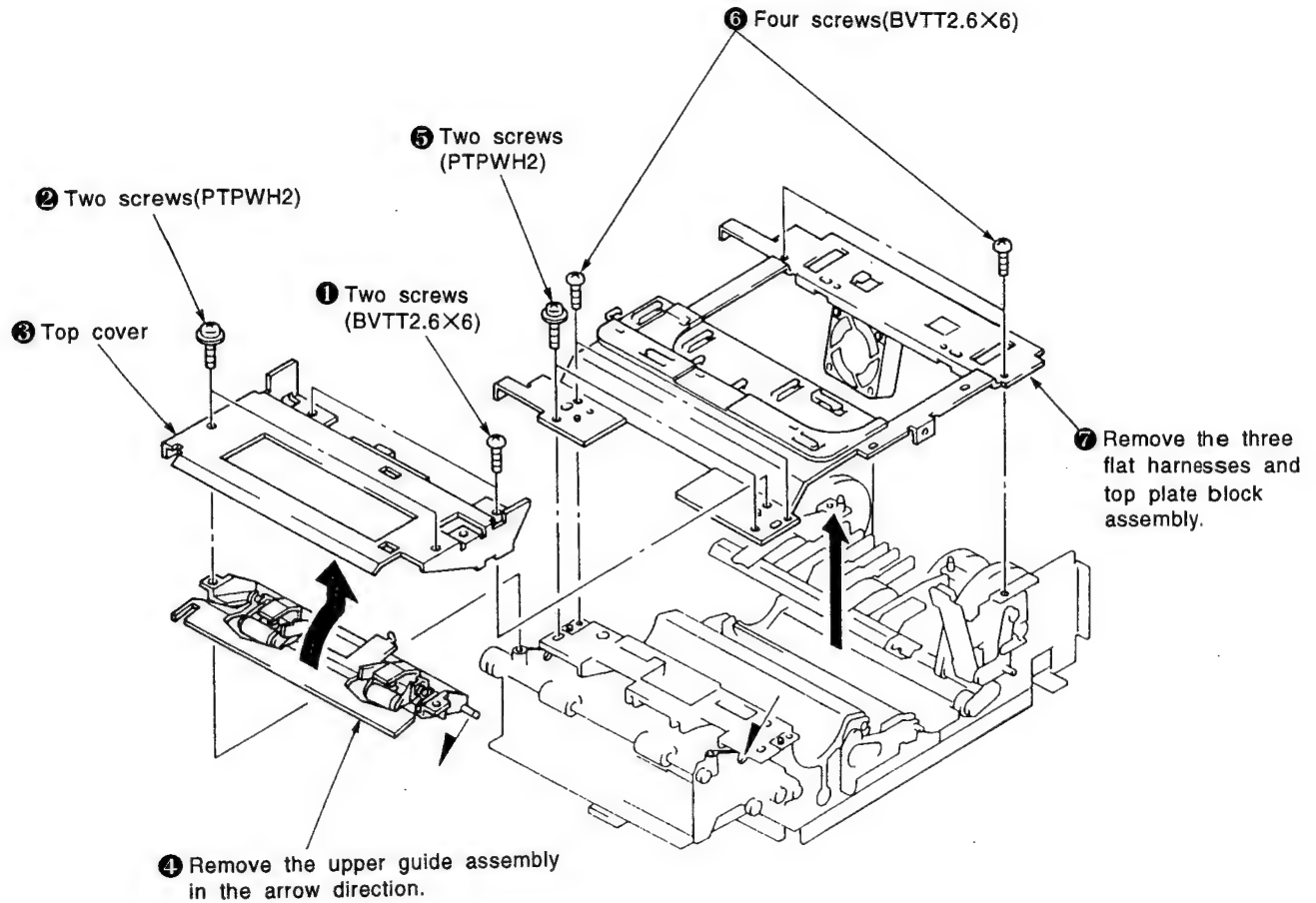
※ Perform this assembly after LARGE FAN BK is removed.



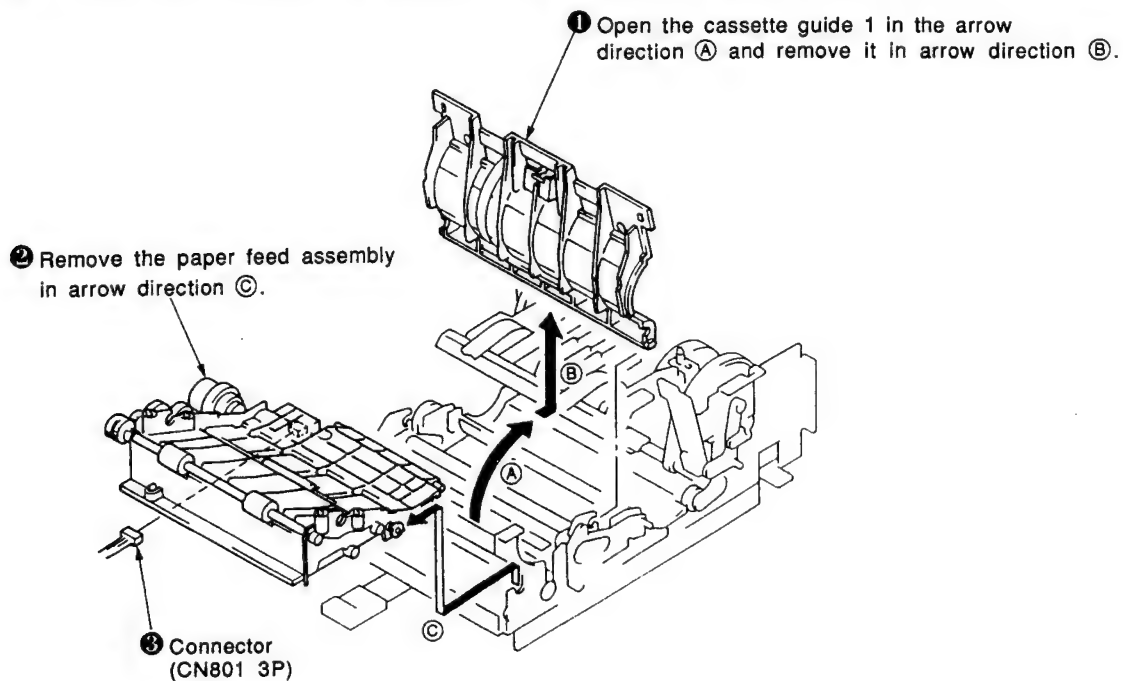
## 2-14. REMOVAL OF HEAD DRIVE MOTOR ASSEMBLY



## 2-15. REMOVAL OF UPPER GUIDE ASSEMBLY AND TOP PLATE BLOCK ASSEMBLY



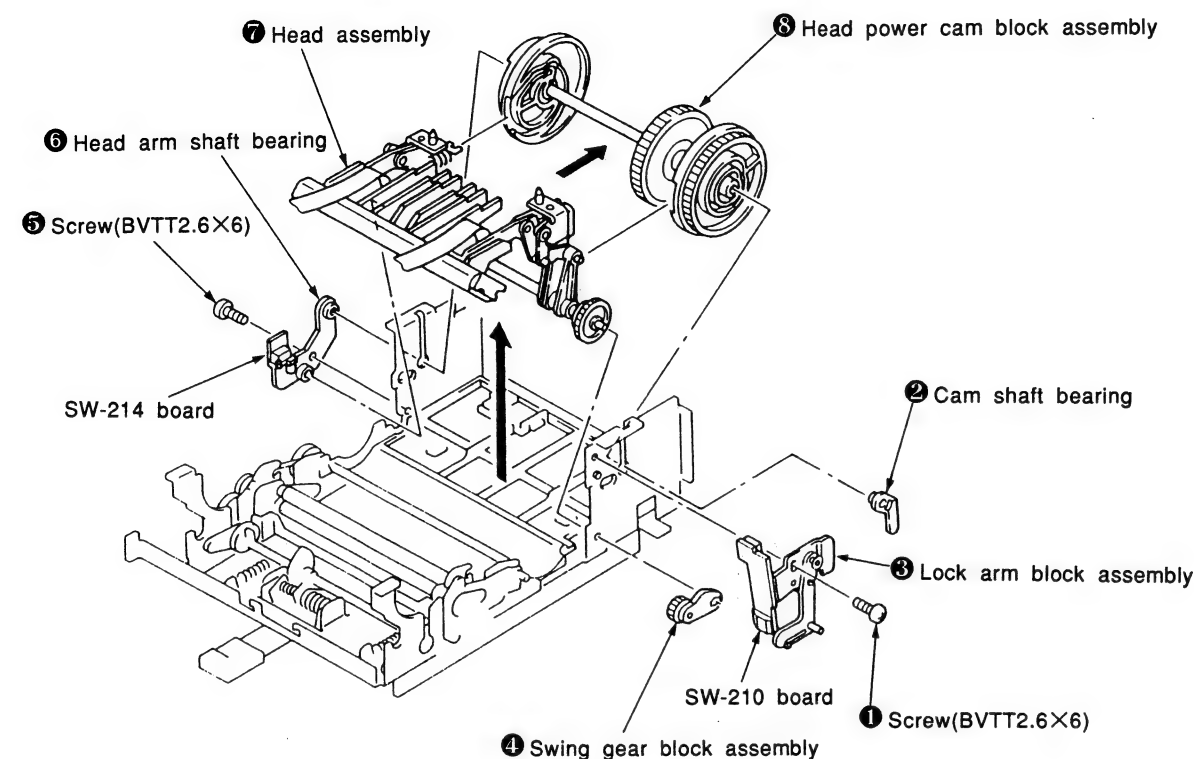
## 2-16. REMOVAL OF CASSETTE GUIDE 1 AND PAPER FEED ASSEMBLY



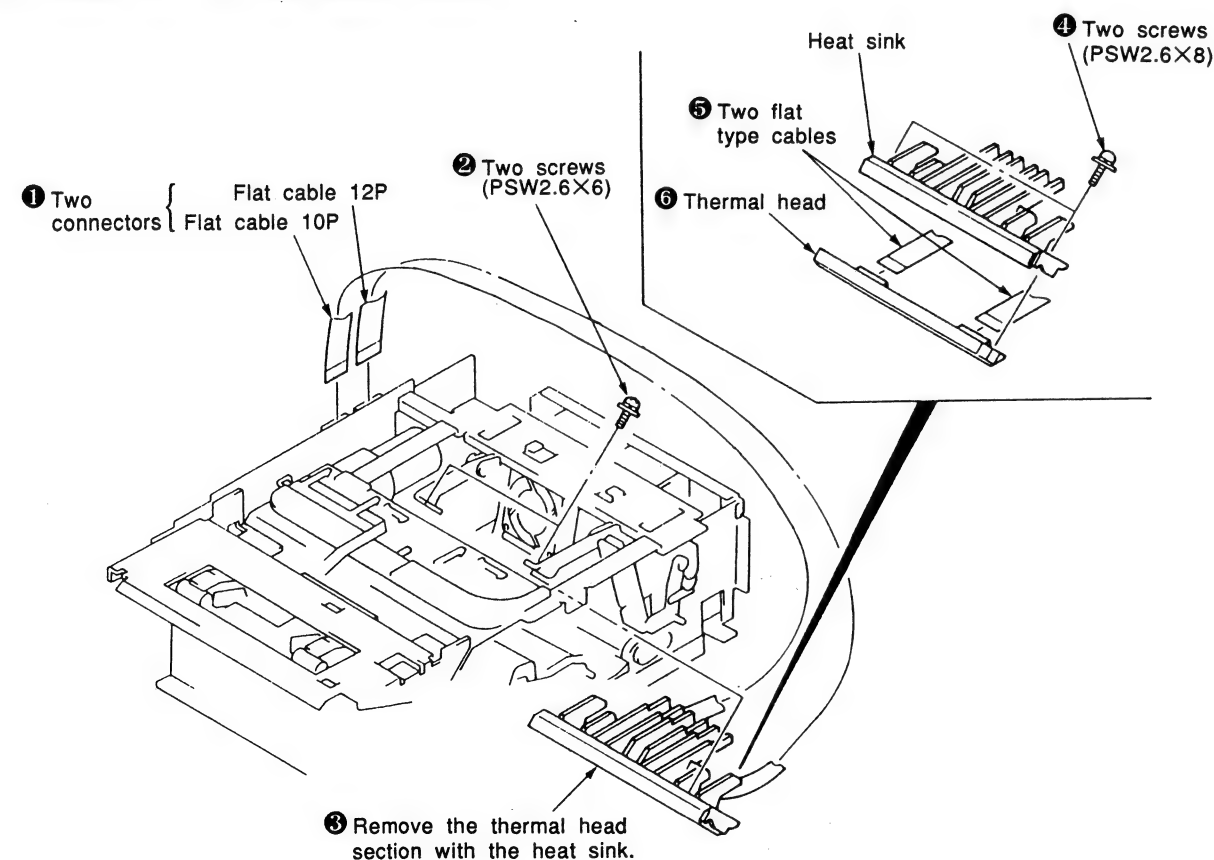


SECTION 3  
DIAGRAMS

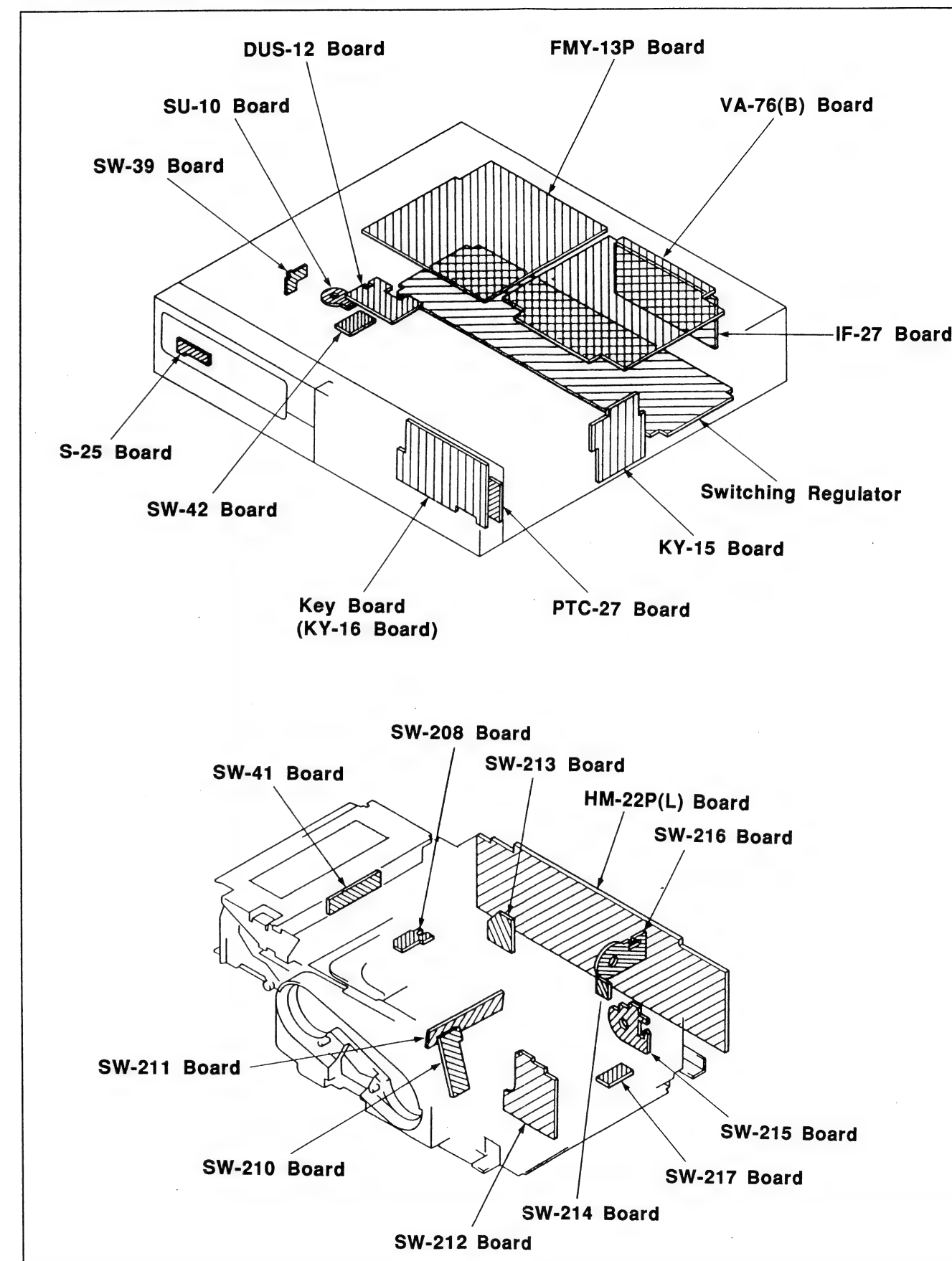
2-17. REMOVAL OF HEAD ASSEMBLY AND HEAD POWER CAM BLOCK ASSEMBLY



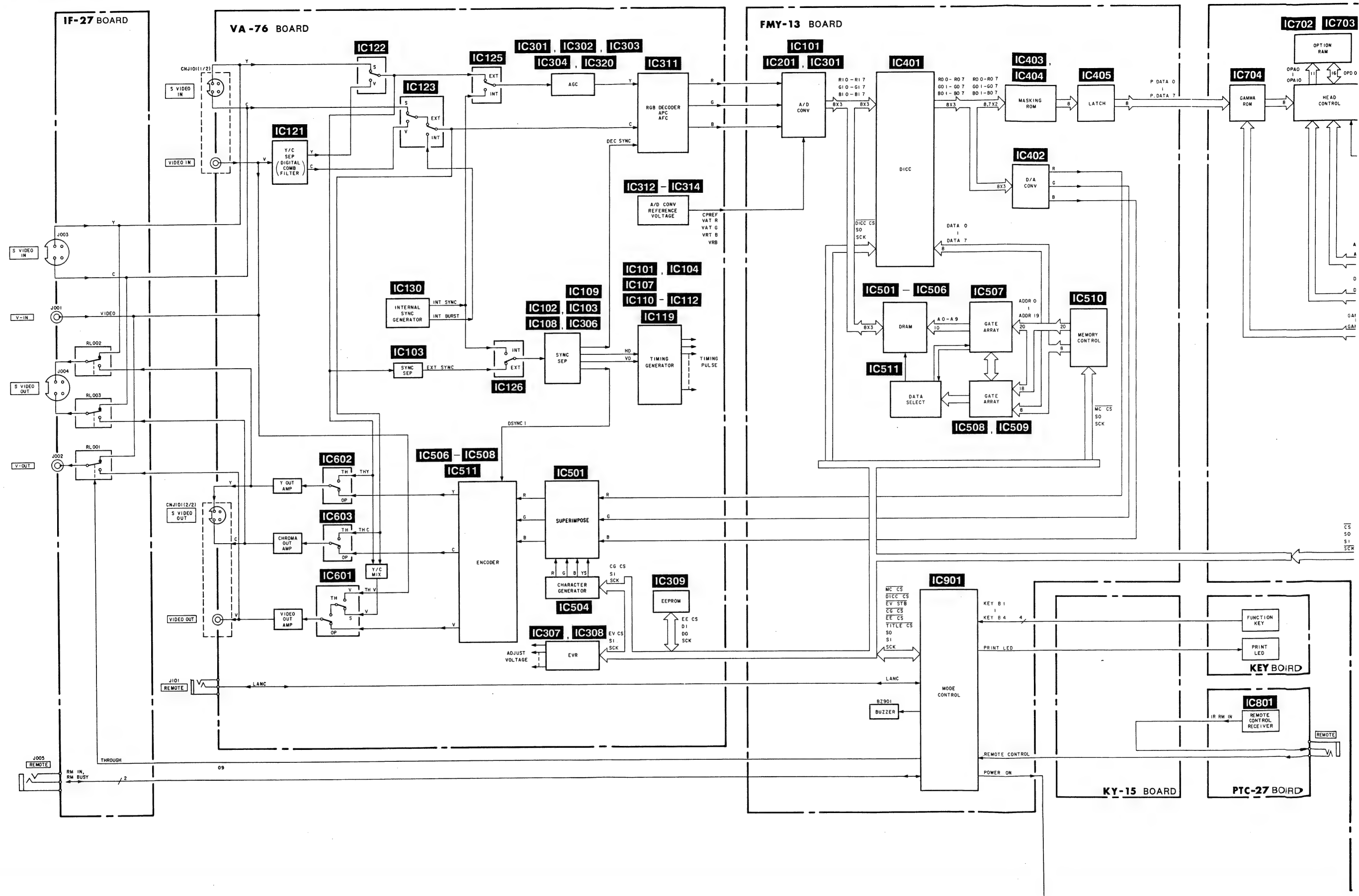
2-18. REMOVAL OF THERMAL HEAD

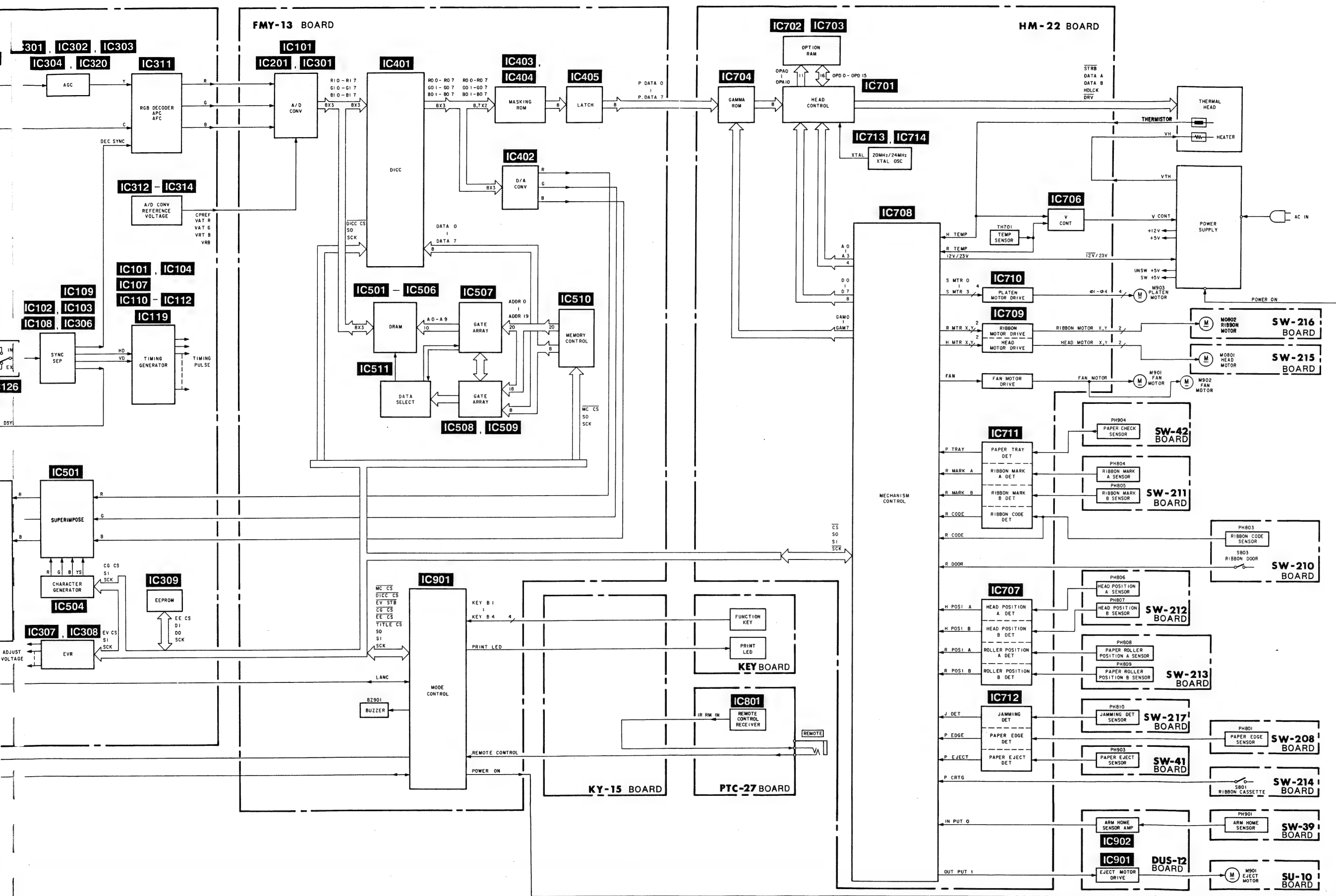


3-1. CIRCUIT BOARDS LOCATION

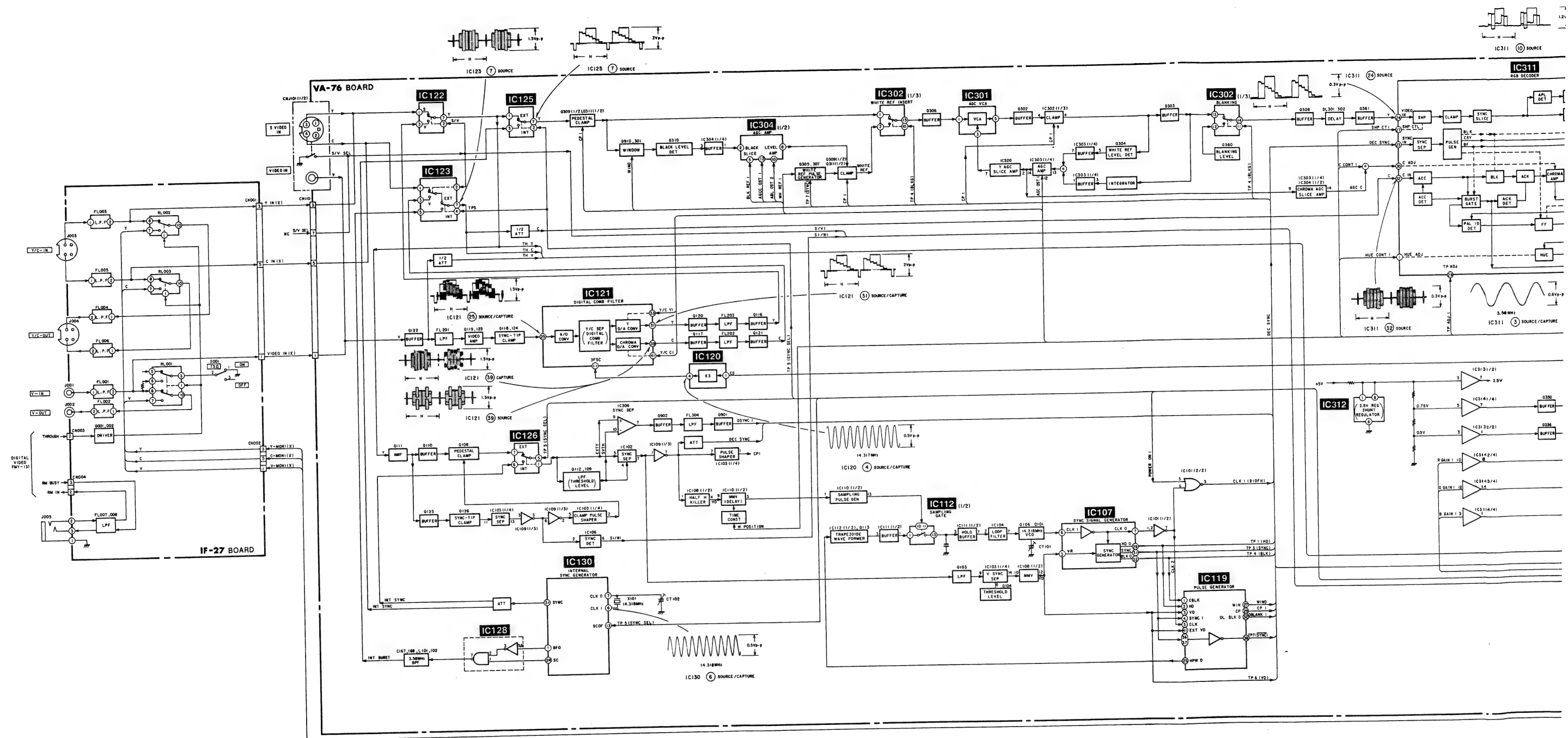


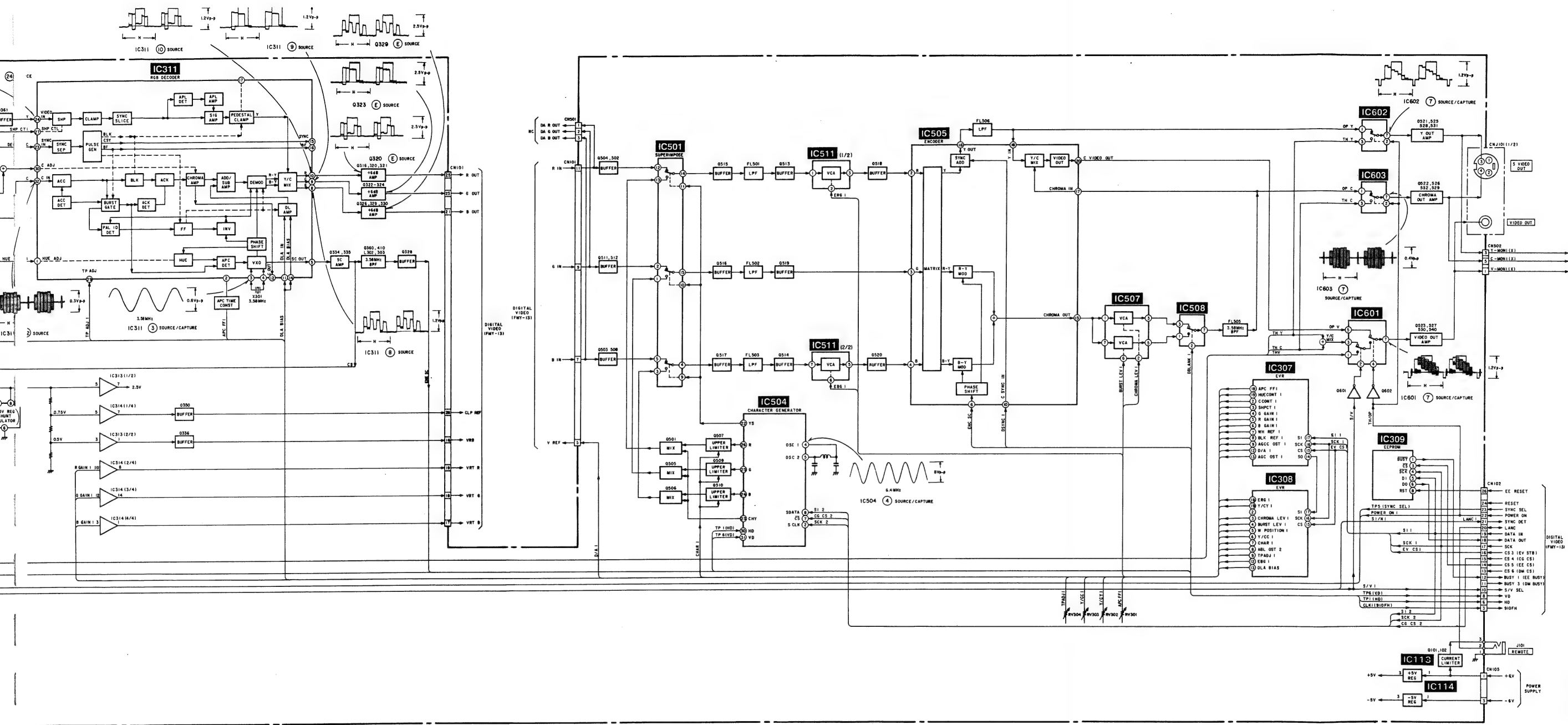
## 3-2. OVERALL BLOCK DIAGRAM



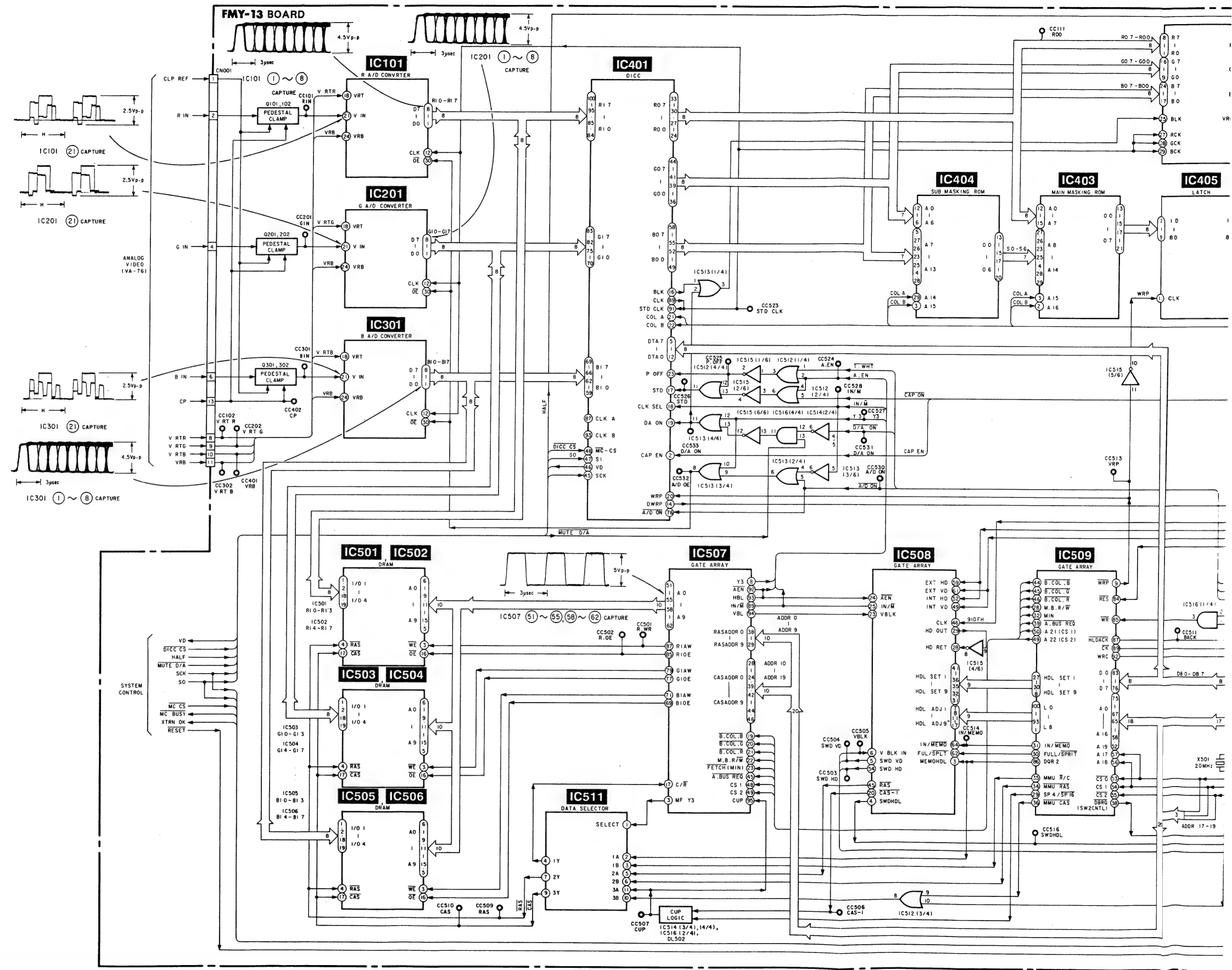


### 3-3. ANALOG BLOCK DIAGRAM





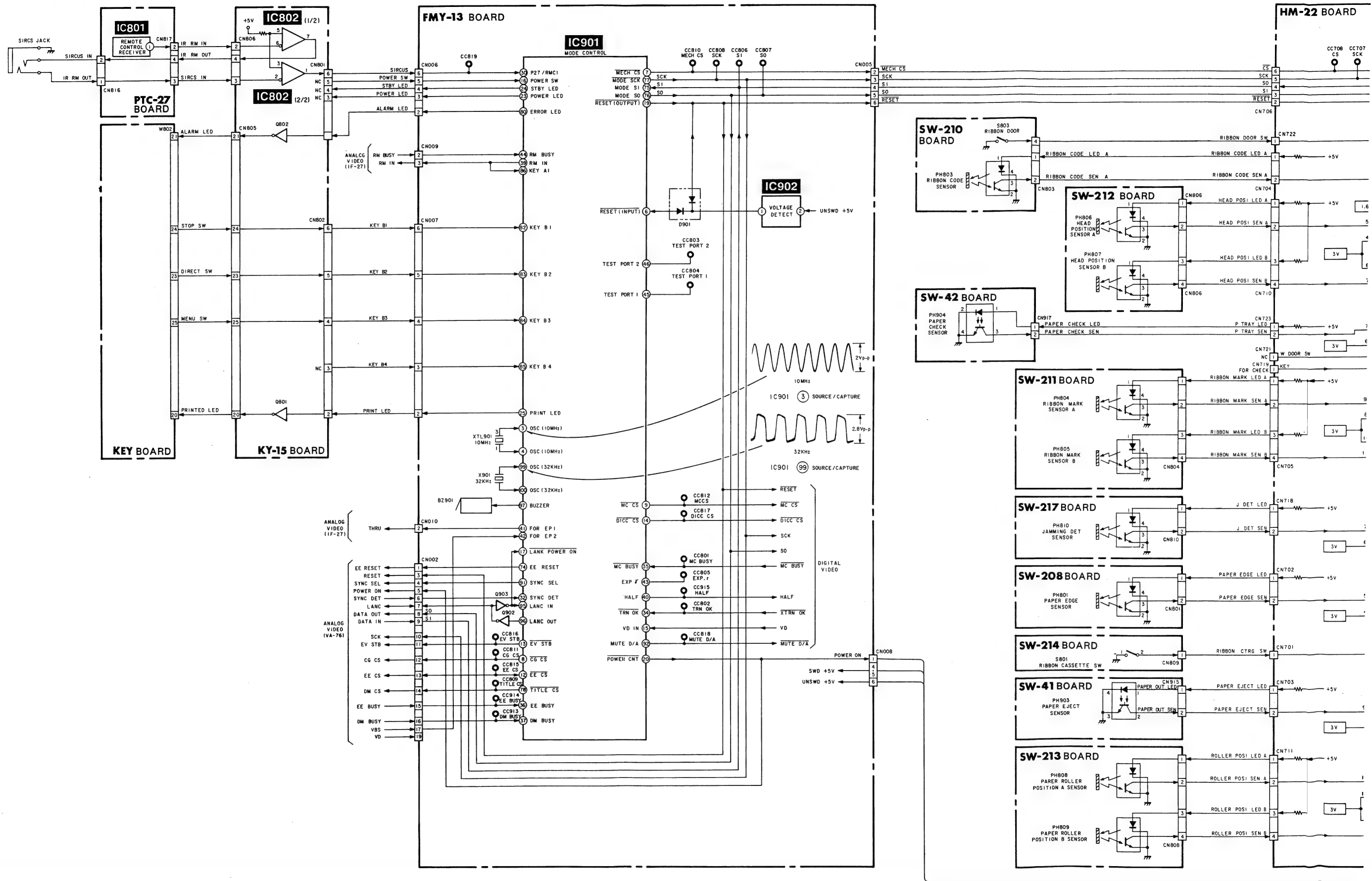
3-4. DIGITAL BLOCK DIAGRAM



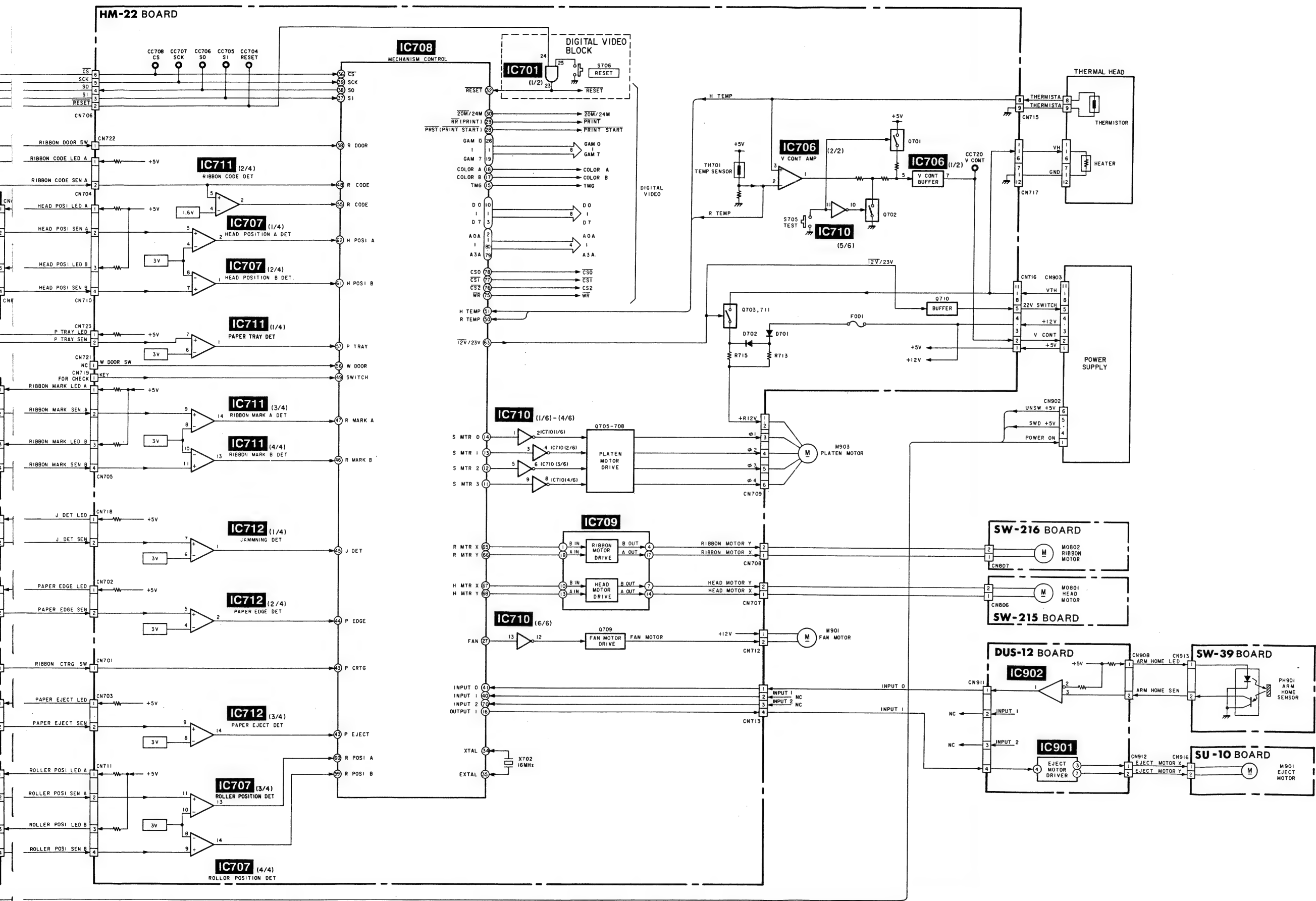




### 3-5. SYSTEM CONTROL BLOCK DIAGRAM



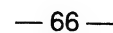






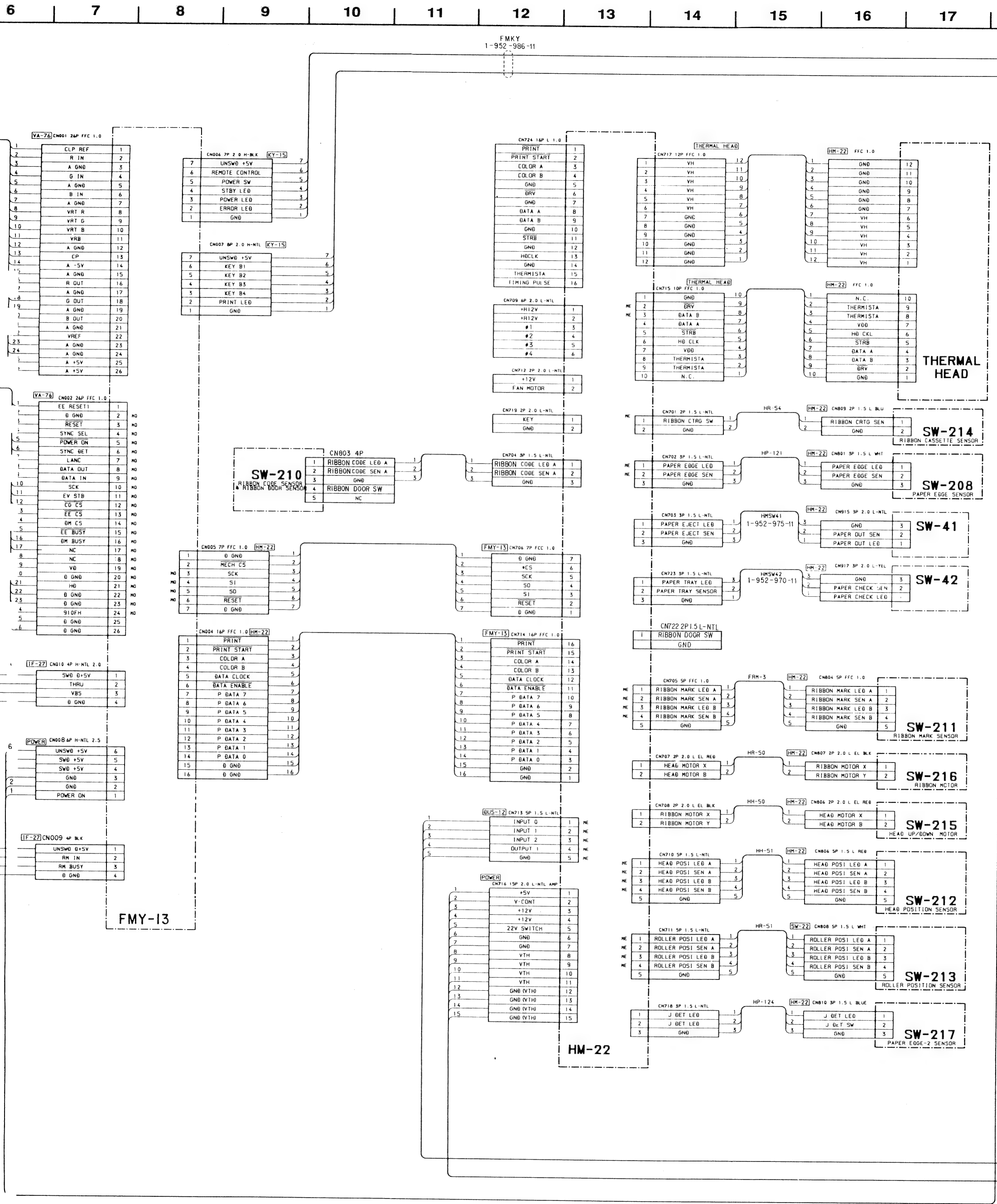


#### 4-1. FRAME SCHEMATIC DIAGRAM





DIAGRAMS



















1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---



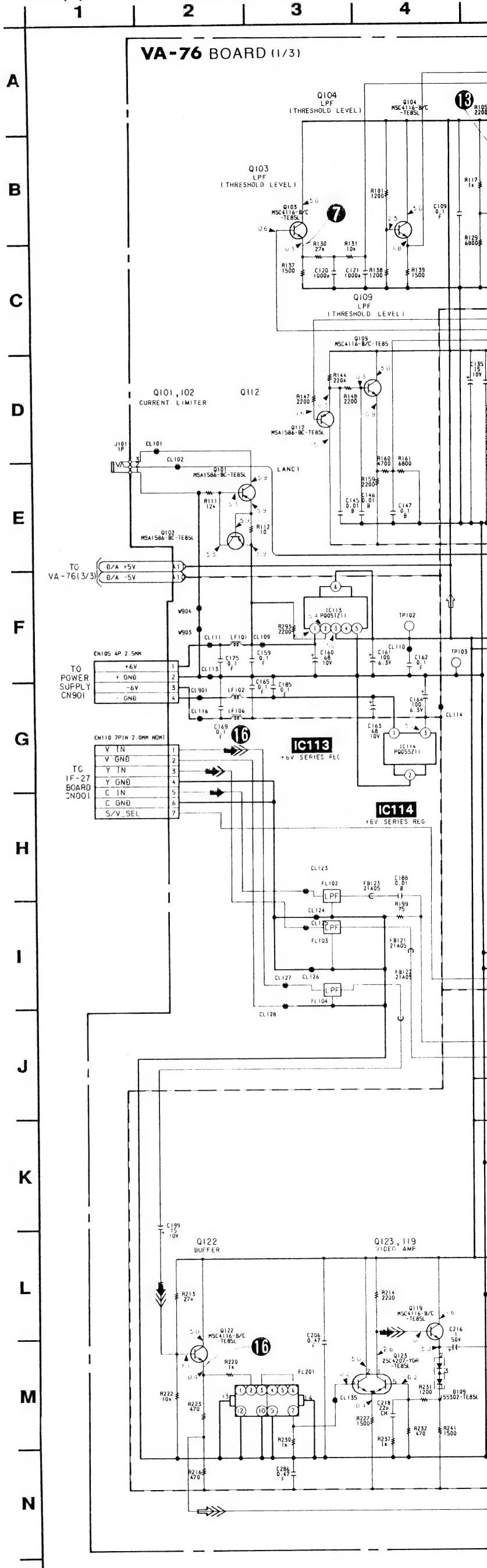
4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.  
(In addition to this, the necessary note is printed in each block.)

- For Printed Wiring Boards.
-  : Soldering Side.
-  : Component Side.
- For Schematic Diagrams.
- Caution when replacing chip parts.  
New parts must be attached after removal of chip.  
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W unless otherwise noted.  
kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted.  
pF: μμF.  
50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
-  : nonflammable resistor.
-  : fusible resistor.
-  : panel designation.
-  : adjustment for repair.
-  : B+ Line.
-  : B- Line.
- Voltages are dc between ground and measurement points.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

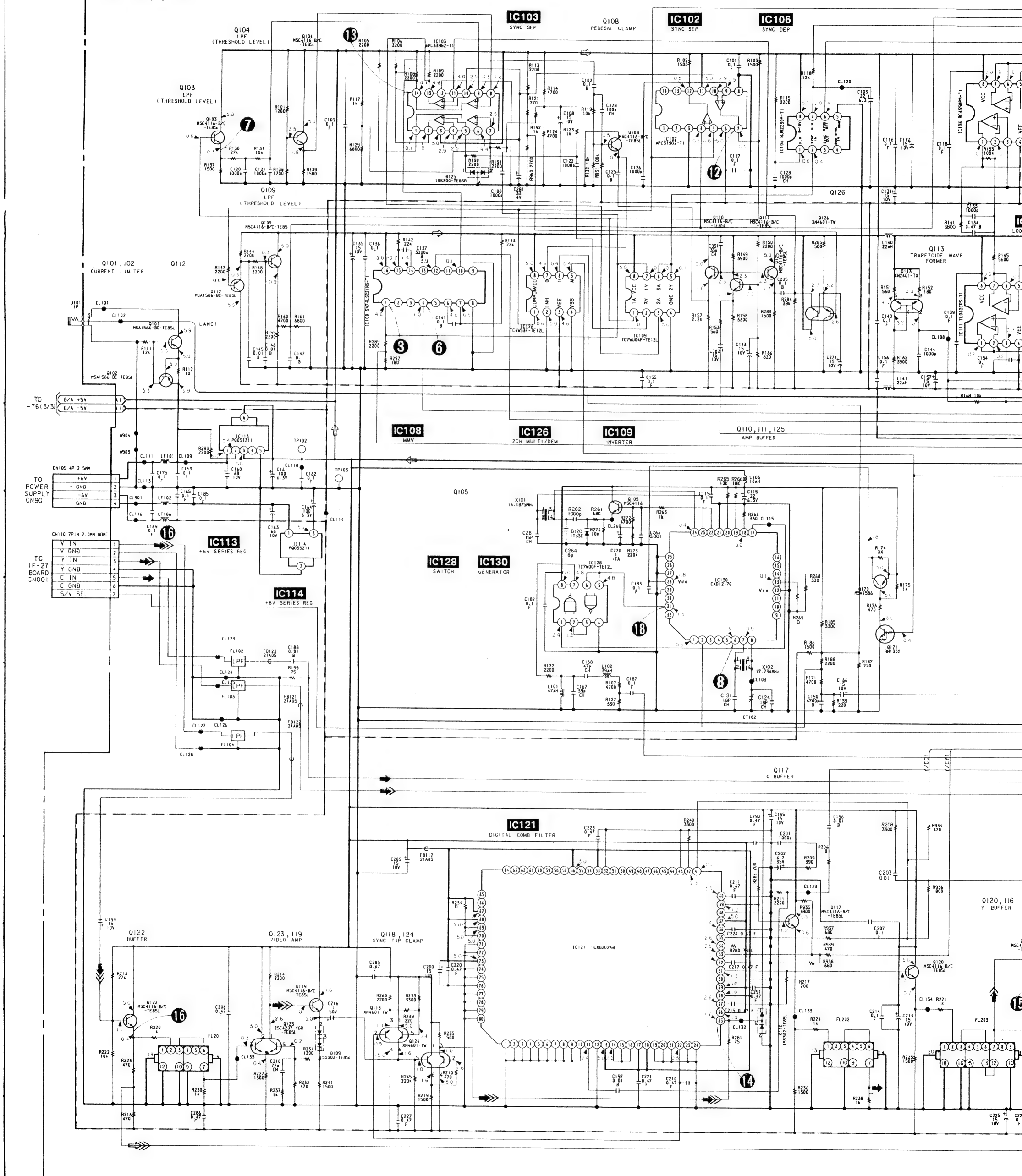
Note: The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

VA-76(B) — 1/3 — (ANALOG VIDEO)



1 2 3 4 5 6 7 8 9 10 11 12

VA-76 BOARD (1/3)



	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB			

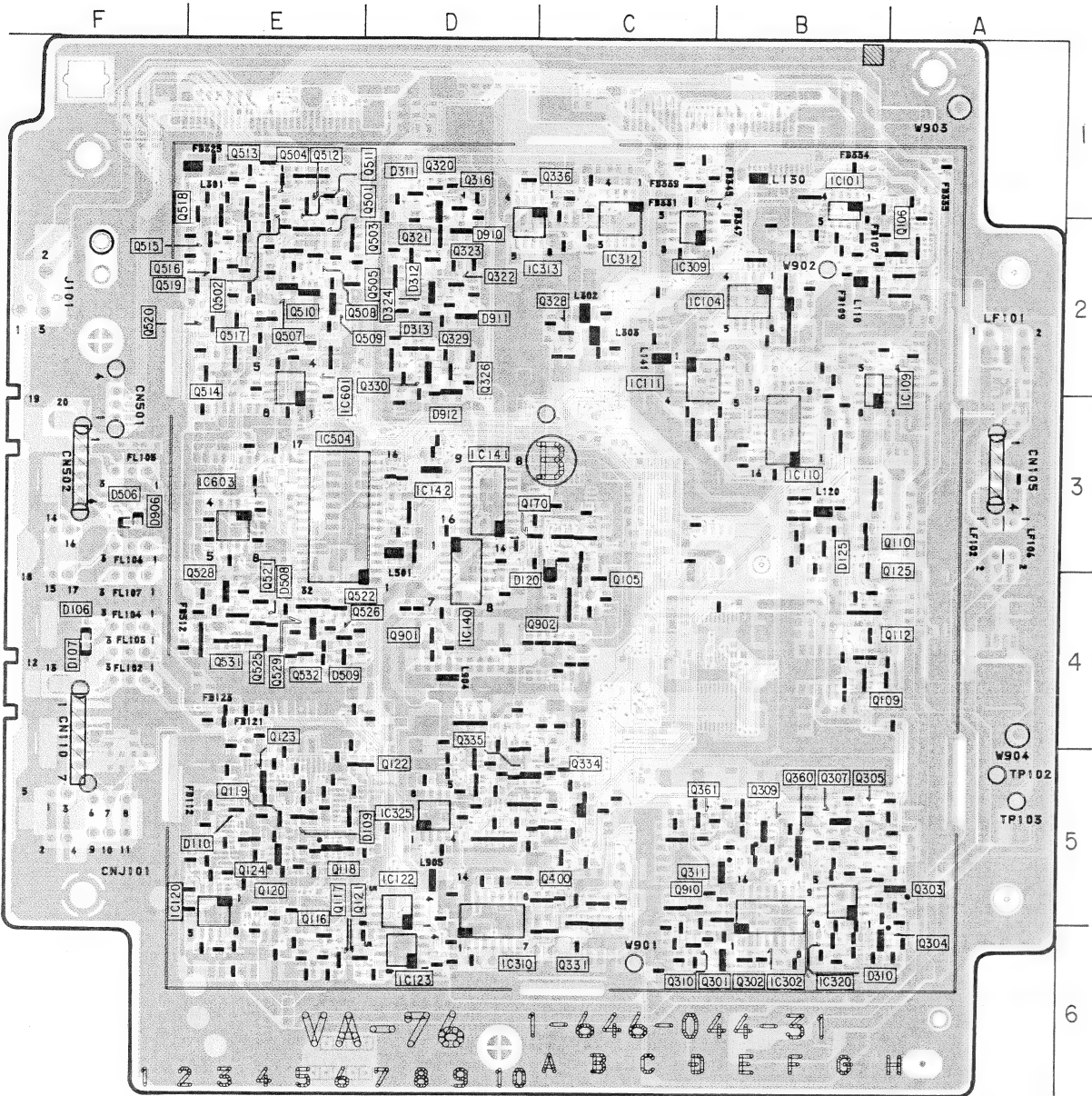


## ANALOG VIDEO

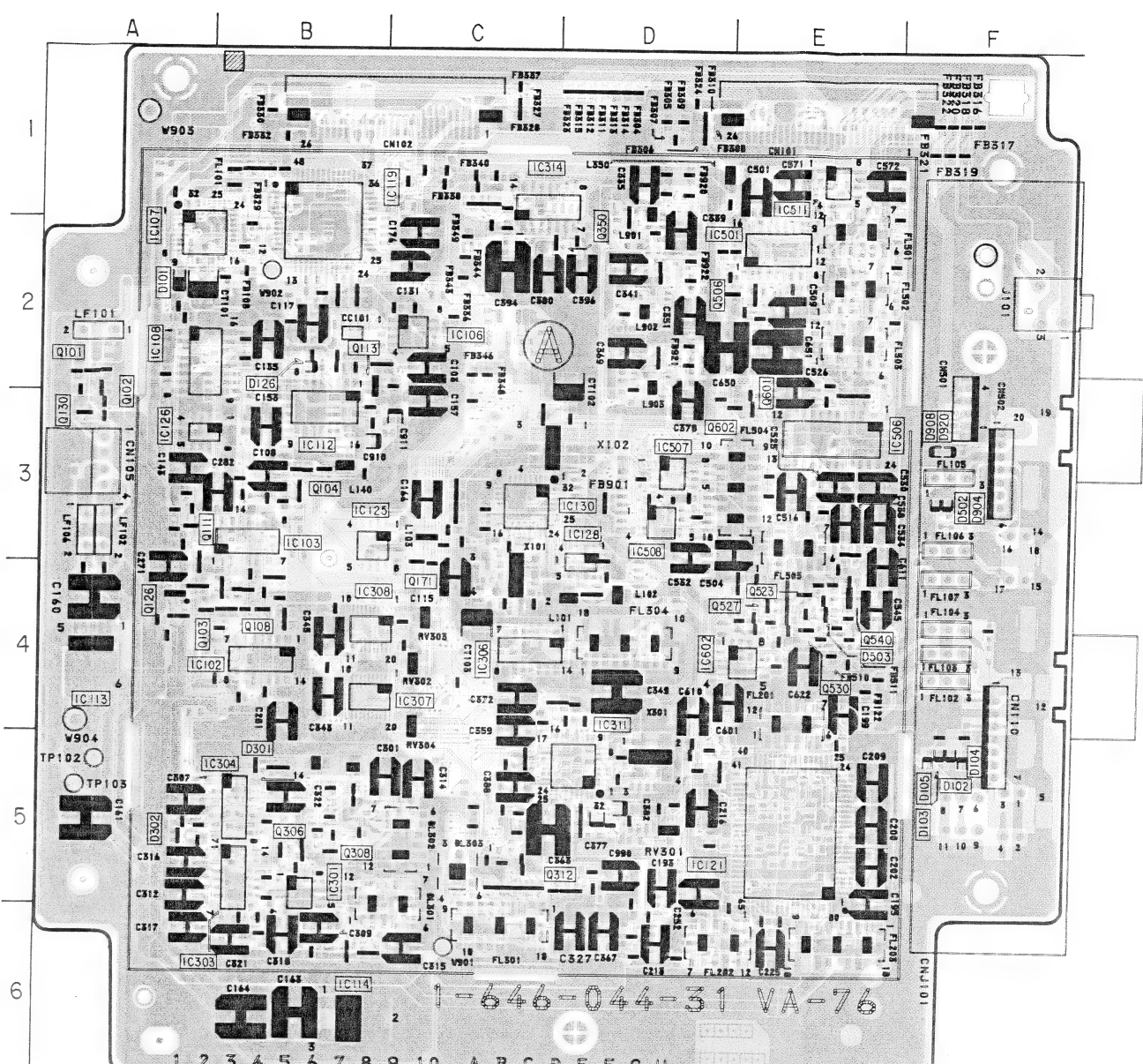
**VA-76(B)**



VA-76(B) (ANALOG VIDEO)



VA-76(B) -SOLDERING SIDE-  
1-646-044-31

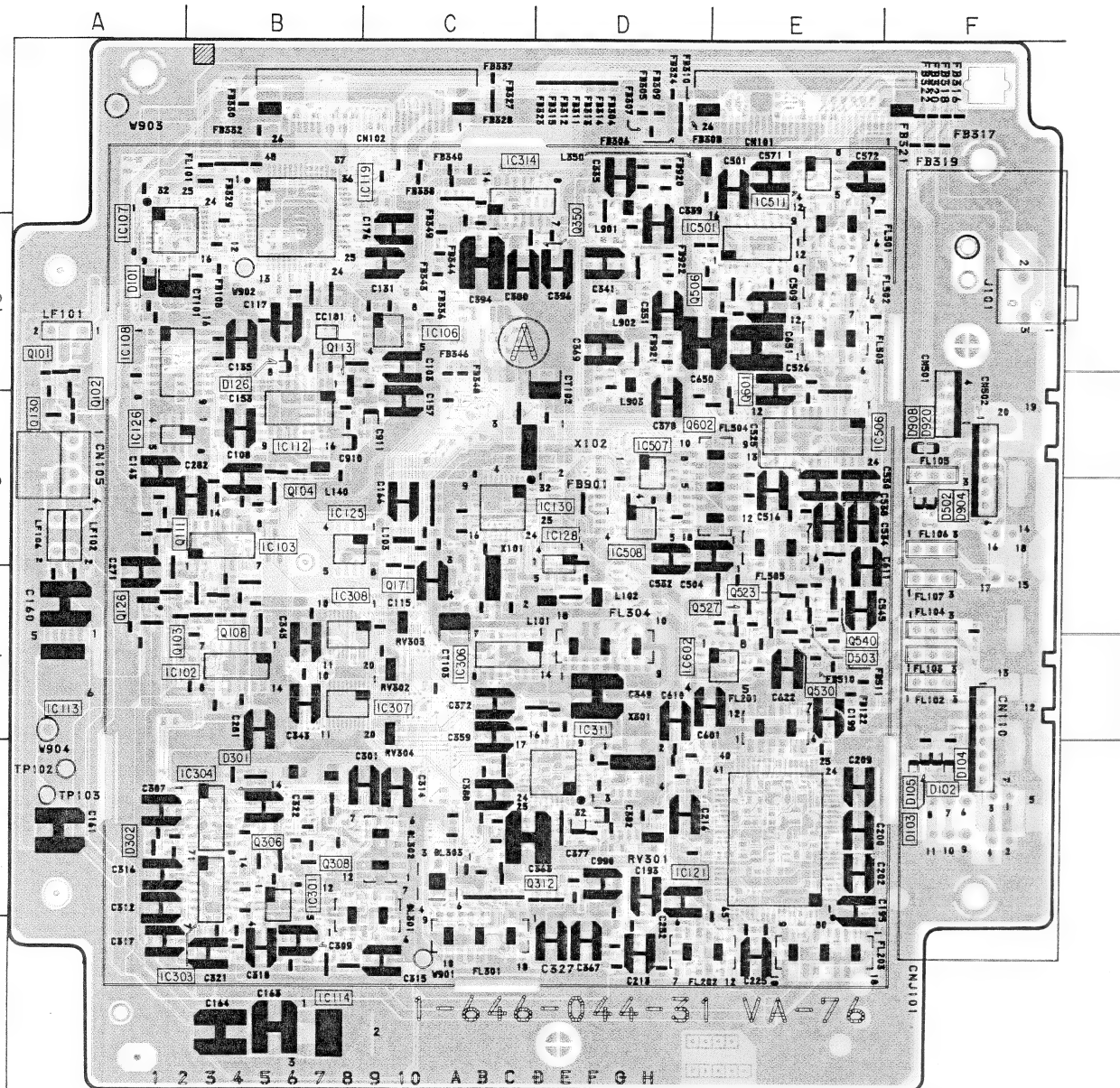


VA-76(B) -COMPONENT SIDE-  
1-646-044-31

VA-76(B) BOARD

CN101	E-1	S
CN102	C-1	S
CN105	A-3	S
CN110	F-5	S
CN502	F-3	S
CT101	A-2	S
CT102	D-2	S
D101	A-2	S
D109	E-5	
D110	E-5	
D125	B-3	
D126	B-2	S
D301	B-5	S
D302	A-5	S
D310	B-6	
D311	D-1	
D312	D-2	
D313	D-2	
D503	E-4	S
D508	E-4	
D509	E-4	
D910	D-2	
D911	D-2	
D912	D-3	
DL301	C-6	S
DL302	C-5	S
DL303	C-5	S
FB107	B-2	
FB108	B-2	S
FB109	E-5	
FB112	B-5	
FB121	E-4	
FB122	E-4	S
FB123	E-5	
FB304	D-1	S
FB305	D-1	S
FB306	D-1	S
FB307	D-1	S
FB308	D-1	S
FB309	D-1	S
FB310	D-1	S
FB311	D-1	S
FB312	D-1	S
FB313	D-1	S
FB314	D-1	S
FB315	D-1	S
FB316	F-1	S
FB317	F-1	S
FB318	F-1	S
FB319	F-1	S
FB320	F-1	S
FB321	F-1	S
FB322	F-1	S
FB323	D-1	S
FB324	D-1	S
FB325	E-1	S
FB327	Q-1	S
FB328	Q-1	S
FB329	B-1	S
FB330	B-1	S
FB331	C-1	
FB332	B-1	S
FB334	B-1	
FB335	A-1	
FB336	C-2	S

S:SOLDERING SIDE



VA-76(B) -COMPONENT SIDE-  
1-646-044-31

## VA-76(B) BOARD

CN101	E-1 S	FB337	C-1 S	IC320	B-5	Q309	B-5
CN102	C-1 S	FB338	C-1 S	IC501	E-2 S	Q310	C-6
CN105	A-3 S	FB339	C-1 S	IC504	E-3 S	Q311	B-5
CN110	F-5 S	FB340	C-1 S	IC506	E-3 S	Q312	D-5 S
CN502	F-3 S	FB343	C-2 S	IC507	D-3 S	Q316	D-1
		FB344	C-2 S	IC508	D-3 S	Q320	D-1
CT101	A-2 S	FB345	C-1 S	IC511	E-1 S	Q321	D-2
CT102	D-2 S	FB346	C-2 S	IC601	E-2 S	Q322	D-2
		FB347	B-2	IC602	E-4 S	Q323	D-2
D101	A-2 S	FB348	C-2 S	IC603	E-3	Q324	D-2
D109	E-5	FB349	C-2 S			Q326	D-3
D110	E-5	FB510	E-4 S	J101	F-2 S	Q328	C-2
D125	B-3	FB511	E-4 S			Q329	D-2
D126	B-2	FB512	E-4	L101	D-4 S	Q330	D-2
D301	B-5 S	FB901	D-3 S	L102	D-4 S	Q331	C-6
D302	A-5 S	FB920	D-1 S	L103	C-3 S	Q334	C-5
D310	B-6	FB921	D-2 S	L110	B-2	Q335	D-5
D311	D-1	FB922	E-2 S	L120	B-3	Q336	D-1
D312	D-2			L130	B-1	Q350	C-2 S
D313	D-2	FL102	F-4 S	L140	B-3 S	Q360	B-5
D503	E-4 S	FL103	F-4 S	L141	C-2	Q361	C-5
D508	E-4	FL104	F-4 S	L301	E-1	Q501	E-2
D509	E-4	FL105	F-3 S	L302	C-2	Q502	E-1
D910	D-2	FL106	F-3 S	L303	C-2	Q503	F-2
D911	D-2	FL107	F-4 S	L350	D-1 S	Q504	E-1
D912	D-3	FL201	E-4 S	L501	D-3	Q505	E-2
		FL202	E-6 S	L901	D-1 S	Q506	E-2 S
DL301	C-6 S	FL203	E-6 S	L902	D-2 S	Q507	E-2
DL302	C-5 S	FL301	C-6 S	L903	D-2 S	Q508	E-2
DL303	C-5 S	FL304	D-4 S	L904	D-4	Q509	E-2
		FL501	E-2 S	L905	D-5	Q510	E-2
FB107	B-2	FL502	E-2 S			Q511	E-2
FB108	B-2 S	FL503	E-2 S	LF101	A-2	Q512	E-1
FB109	B-2	FL504	E-3 S	LF102	A-3	Q513	E-1
FB112	E-5	FL505	E-3 S	LF106	A-3	Q514	E-2
FB121	E-4					Q515	E-2
FB122	E-4 S	IC102	B-4 S	Q101	A-2 S	Q516	E-2
FB123	E-5	IC103	B-3 S	Q102	A-2 S	Q517	E-2
FB304	D-1 S	IC104	B-2	Q103	A-4 S	Q518	E-2
FB305	D-1 S	IC106	C-2 S	Q104	B-3 S	Q519	E-2
FB306	D-1 S	IC107	A-2 S	Q105	C-4	Q520	E-2
FB307	D-1 S	IC108	A-2 S	Q106	A-2	Q521	E-4
FB308	D-1 S	IC109	B-2	Q108	B-4 S	Q522	E-4
FB309	D-1 S	IC110	B-3	Q109	B-4	Q523	E-4 S
FB310	D-1 S	IC111	C-2	Q110	B-3	Q525	E-4
FB311	D-1 S	IC112	B-3 S	Q111	A-3 S	Q526	E-4
FB312	D-1 S	IC113	A-4 S	Q112	B-4	Q527	E-4 S
FB313	D-1 S	IC114	B-6 S	Q113	B-2 S	Q528	E-4
FB314	D-1 S	IC119	B-2 S	Q116	E-6	Q529	E-4
FB315	D-1 S	IC121	E-5 S	Q117	E-6	Q530	E-4 S
FB316	F-1 S	IC122	D-5	Q118	E-5	Q531	E-4
FB317	F-1 S	IC123	D-6	Q119	E-5	Q532	E-4
FB318	F-1 S	IC125	B-3 S	Q120	D-6	Q540	E-4 S
FB319	F-1 S	IC126	A-3 S	Q121	D-6	Q601	E-3 S
FB320	F-1 S	IC128	D-3 S	Q122	E-5	Q602	E-3 S
FB321	F-1 S	IC130	C-3 S	Q123	E-5	Q901	D-4
FB322	F-1 S	IC301	B-5 S	Q124	E-5	Q902	C-4
FB323	D-1 S	IC302	B-5	Q125	B-3	Q910	C-5
FB324	D-1 S	IC303	B-5 S	Q126	A-4 S		
FB325	E-1	IC304	B-5 S	Q170	C-3	RV301	D-5 S
FB327	C-1 S	IC306	C-4 S	Q171	C-3 S	RV302	C-4 S
FB328	C-1 S	IC307	B-4 S	Q301	B-6	RV303	C-4 S
FB329	B-1 S	IC308	B-4 S	Q302	B-6	RV304	C-4 S
FB330	B-1 S	IC309	C-2	Q303	A-5		
FB331	C-1	IC310	D-6	Q304	A-6	X101	C-4 S
FB332	B-1 S	IC311	D-5 S	Q305	B-5	X102	D-3 S
FB334	B-1	IC312	C-2	Q306	B-5 S	X301	D-5 S
FB335	A-1	IC313	D-2	Q307	B-5		
FB336	C-2 S	IC314	C-1 S	Q308	B-5 S		

S:SOLDERING SIDE

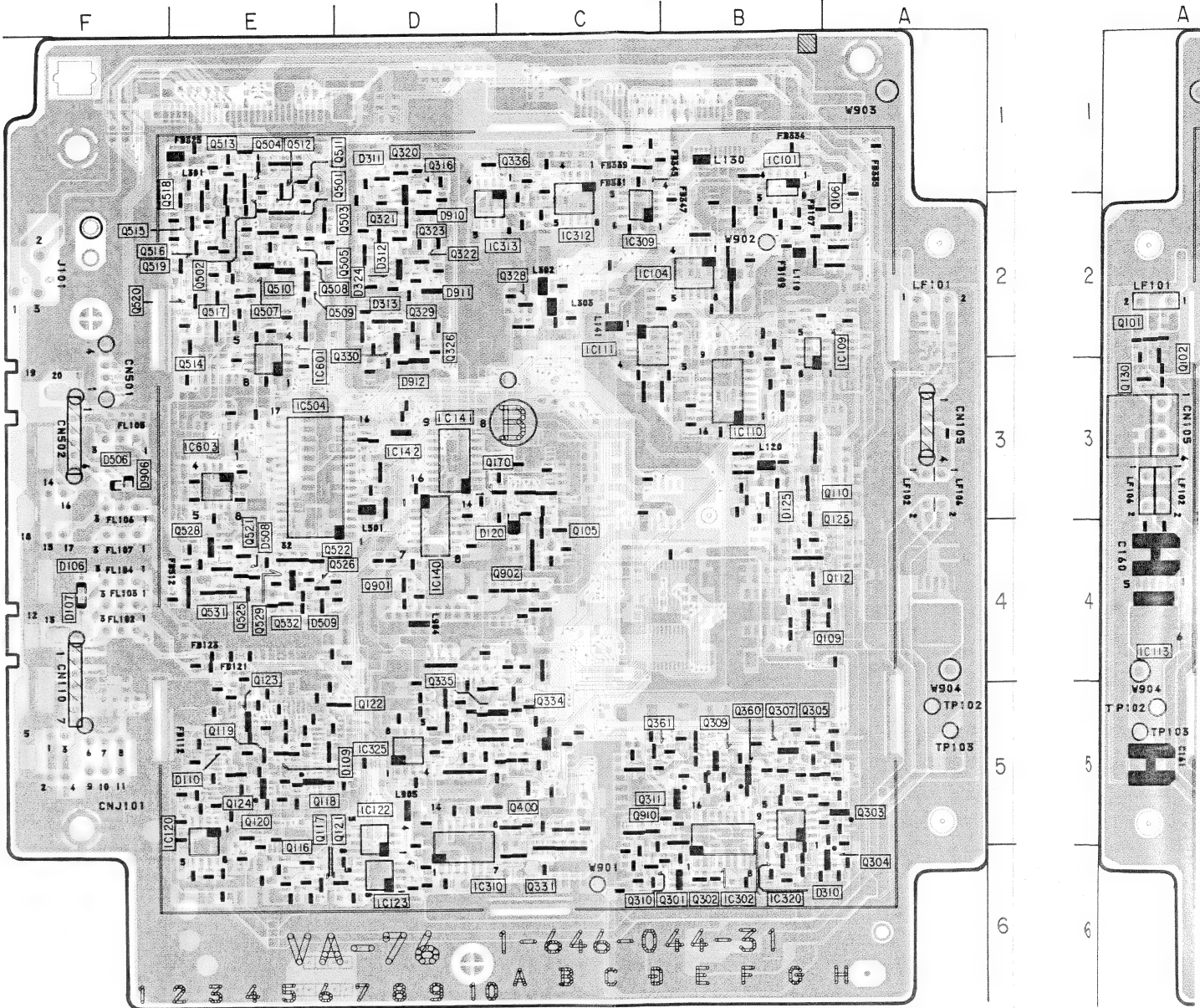


VA-76(B) (ANALOG VIDEO)

VA-76(B) BOARD

CN101	E-1 S	FB337	C-1 S	IC320	B-5	Q309	B-5
CN102	C-1 S	FB338	C-1 S	IC501	E-2 S	Q310	C-6
CN105	A-3 S	FB339	C-1 S	IC504	E-3	Q311	B-5
CN110	F-5 S	FB340	C-1 S	IC506	E-3 S	Q312	D-5 S
CN502	F-3 S	FB343	C-2 S	IC507	D-3 S	Q316	D-1
		FB344	C-2 S	IC508	D-3 S	Q320	D-1
CT101	A-2 S	FB345	C-1	IC511	E-1 S	Q321	D-2
CT102	D-2 S	FB346	C-2 S	IC601	E-2	Q322	D-2
		FB347	B-2	IC602	E-4 S	Q323	D-2
D101	A-2 S	FB348	C-2 S	IC603	E-3	Q324	D-2
D109	E-5	FB349	C-2 S			Q326	D-3
D110	E-5	FB510	E-4 S	J101	F-2 S	Q328	C-2
D125	B-3	FB511	E-4 S			Q329	D-2
D126	B-2 S	FB512	E-4	L101	D-4 S	Q330	D-2
D301	B-5 S	FB901	D-3 S	L102	D-4 S	Q331	C-6
D302	A-5 S	FB920	D-1 S	L103	C-3 S	Q334	C-5
D310	B-6	FB921	D-2 S	L110	B-2	Q335	D-5
D311	D-1	FB922	E-2 S	L120	B-3	Q336	D-1
D312	D-2			L130	B-1	Q350	C-2 S
D313	D-2	FL102	F-4 S	L140	B-3 S	Q360	B-5
D503	E-4 S	FL103	F-4 S	L141	C-2	Q361	C-5
D508	E-4	FL104	F-4 S	L301	E-1	Q501	E-2
D509	E-4	FL105	F-3 S	L302	C-2	Q502	E-1
D910	D-2	FL106	F-3 S	L303	C-2	Q503	F-2
D911	D-2	FL107	F-4 S	L350	D-1 S	Q504	E-1
D912	D-3	FL201	E-4 S	L501	D-3	Q505	E-2 S
		FL202	E-6 S	L901	D-1 S	Q506	E-2
DL301	C-6 S	FL203	E-6 S	L902	D-2 S	Q507	E-2
DL302	C-5 S	FL301	C-6 S	L903	D-2 S	Q508	E-2
DL303	C-5 S	FL304	D-4 S	L904	D-4	Q509	E-2
		FL501	E-2 S	L905	D-5	Q510	E-2
FB107	B-2	FL502	E-2 S	LF101	A-2	Q511	E-2
FB108	B-2 S	FL503	E-2 S	LF102	A-3	Q512	E-1
FB109	B-2	FL504	E-3 S	LF106	A-3	Q513	E-1
FB112	E-5	FL505	E-3 S			Q514	E-2
FB121	E-4			Q101	A-2 S	Q515	E-2
FB122	E-4 S	IC102	B-4 S	Q102	A-2 S	Q516	E-2
FB123	E-5	IC103	B-3 S	Q103	A-4 S	Q517	E-2
FB304	D-1 S	IC104	B-2	Q104	B-3 S	Q518	E-2
FB305	D-1 S	IC106	C-2 S	Q105	C-4	Q519	E-2
FB306	D-1 S	IC107	A-2 S	Q106	A-2	Q520	E-2
FB307	D-1 S	IC108	A-2 S	Q108	B-4 S	Q521	E-4
FB308	D-1 S	IC109	B-2	Q109	B-4	Q522	E-4 S
FB309	D-1 S	IC110	B-3	Q110	B-3	Q523	E-4
FB310	D-1 S	IC111	C-2	Q111	A-3 S	Q525	E-4
FB311	D-1 S	IC112	B-3 S	Q112	B-4	Q526	E-4 S
FB312	D-1 S	IC113	A-4 S	Q113	B-2 S	Q527	E-4
FB313	D-1 S	IC114	B-6 S	Q116	E-6	Q528	E-4
FB314	D-1 S	IC119	B-2 S	Q117	E-6	Q529	E-4
FB315	D-1 S	IC121	E-5 S	Q118	E-5	Q530	E-4 S
FB316	F-1 S	IC122	D-5	Q119	E-5	Q531	E-4
FB317	F-1 S	IC123	D-6	Q120	D-6	Q532	E-4
FB318	F-1 S	IC125	B-3 S	Q121	D-6	Q540	E-4
FB319	F-1 S	IC126	A-3 S	Q122	E-5	Q601	E-3 S
FB320	F-1 S	IC128	D-3 S	Q123	E-5	Q602	E-3 S
FB321	F-1 S	IC130	C-3 S	Q124	E-5	Q901	D-4
FB322	F-1 S	IC301	B-5 S	Q125	B-3	Q902	C-4
FB323	D-1 S	IC302	B-5	Q126	A-4 S	Q910	C-5
FB324	D-1 S	IC303	B-5 S	Q170	C-3	RV301	D-5 S
FB325	E-1	IC304	B-5 S	Q171	C-3 S	RV302	C-4 S
FB327	C-1 S	IC306	C-4 S	Q301	B-6	RV303	C-4 S
FB328	C-1 S	IC307	B-4 S	Q302	B-6	RV304	C-4 S
FB329	B-1 S	IC308	B-4 S	Q303	A-5		
FB330	B-1 S	IC309	C-2	Q304	A-6	X101	C-4 S
FB331	C-1	IC310	D-6	Q305	B-5	X102	D-3 S
FB332	B-1 S	IC311	D-5 S	Q306	B-5 S	X301	D-5 S
FB334	B-1	IC312	C-2	Q307	B-5		
FB335	A-1	IC313	D-2	Q308	B-5 S		
FB336	C-2 S	IC314	C-1 S				

S:SOLDERING SIDE



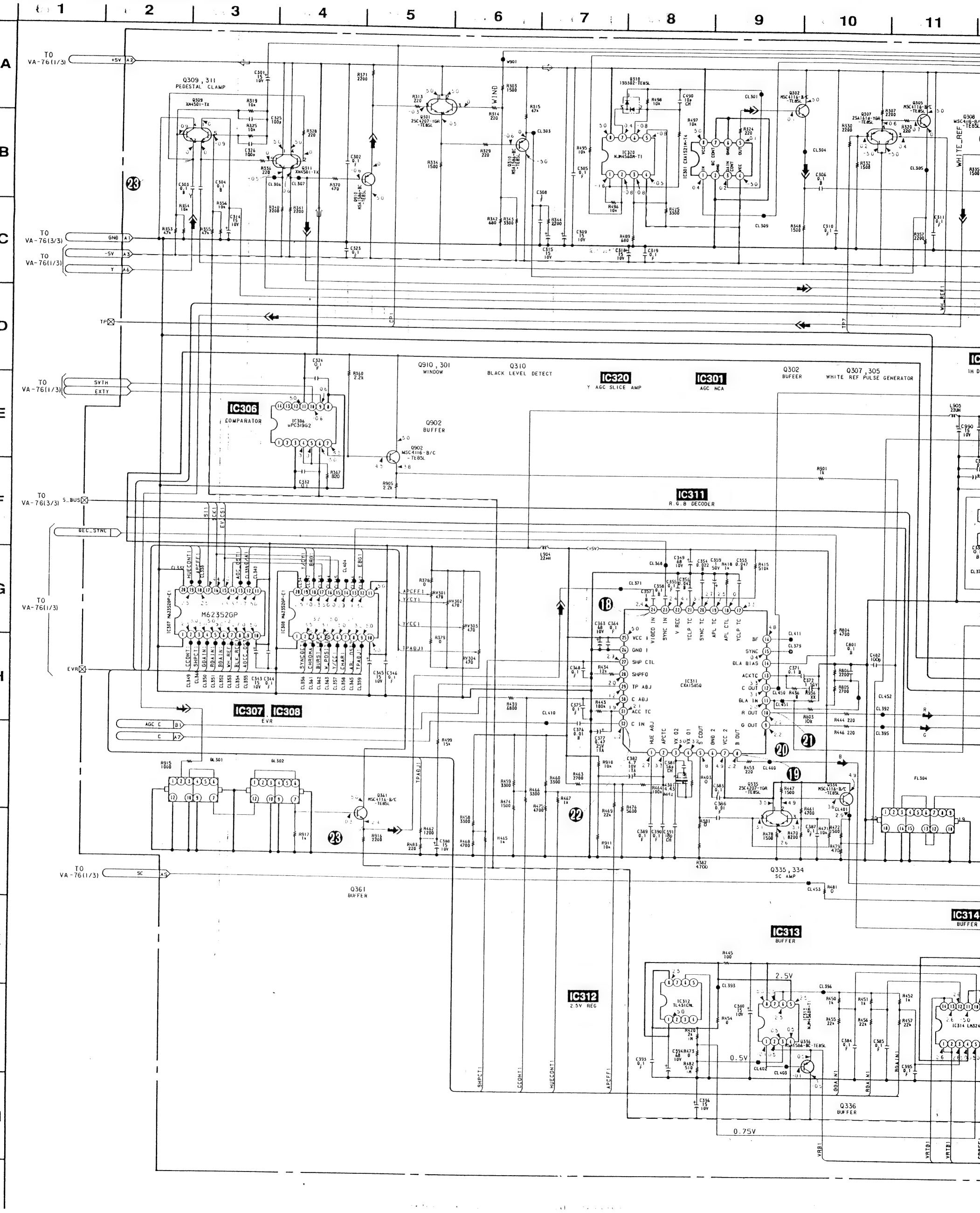
VA-76(B) -SOLDERING SIDE-  
1-646-044-31







VA-76(B) — 2/3 — (ANALOG VIDEO)



• SIGNAL PATH

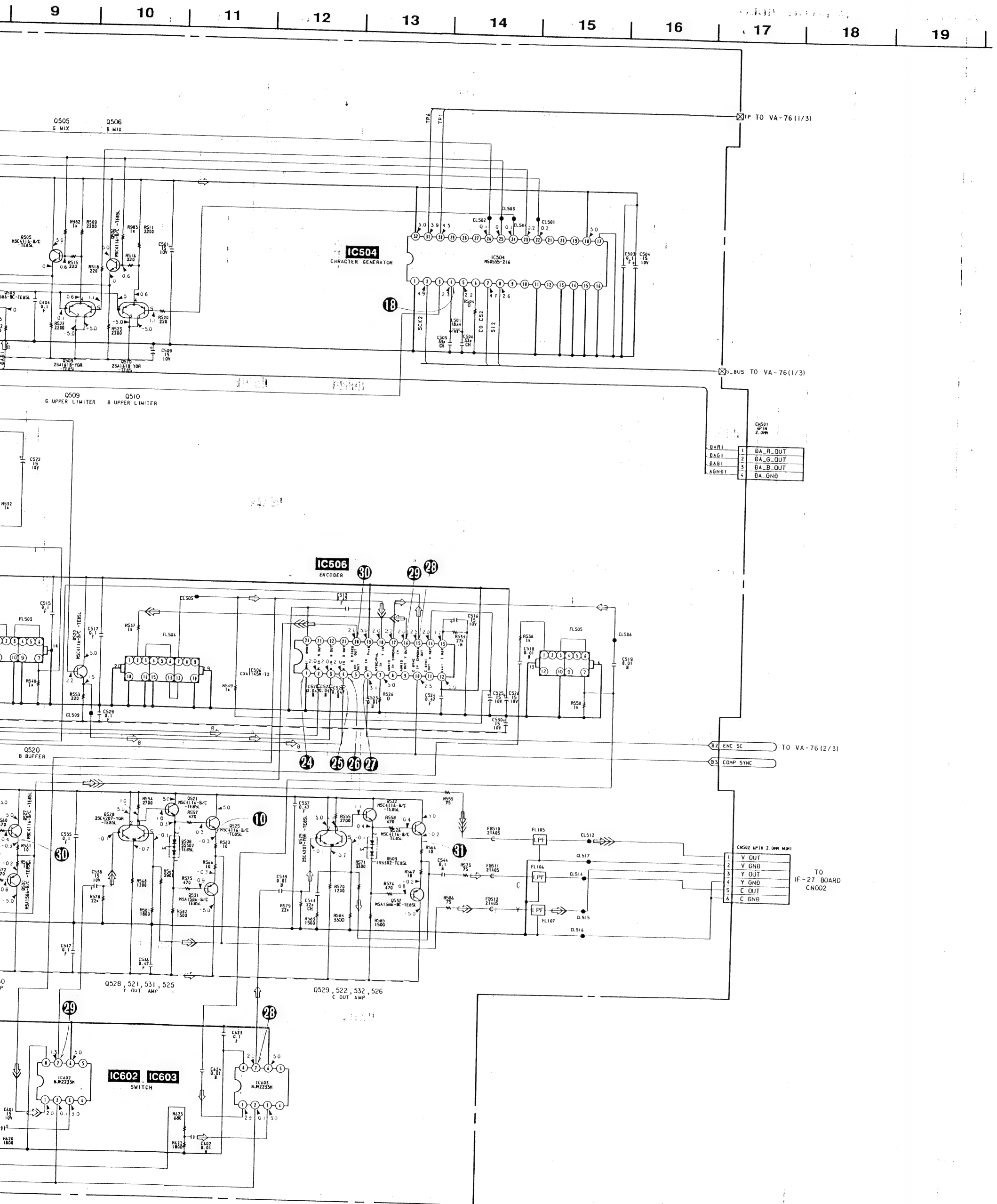
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	CHROMA	Y	Y/CHROMA
REC	→	→	→
PB	→	→	→

• SIGNAL PATH

VIDEO SIGNAL	REC	PB
ANALOG R	→ R	→ R
ANALOG G	→ G	→ G
ANALOG B	→ B	→ B

• SIGNAL PATH

VIDEO SIGNAL	REC	PB
ANALOG R		⇒ R
ANALOG G		⇒ G
ANALOG B		⇒ B



ANALOG VIDEO

ANALOG VIDEO

VA-76(R)

VA-76(R)

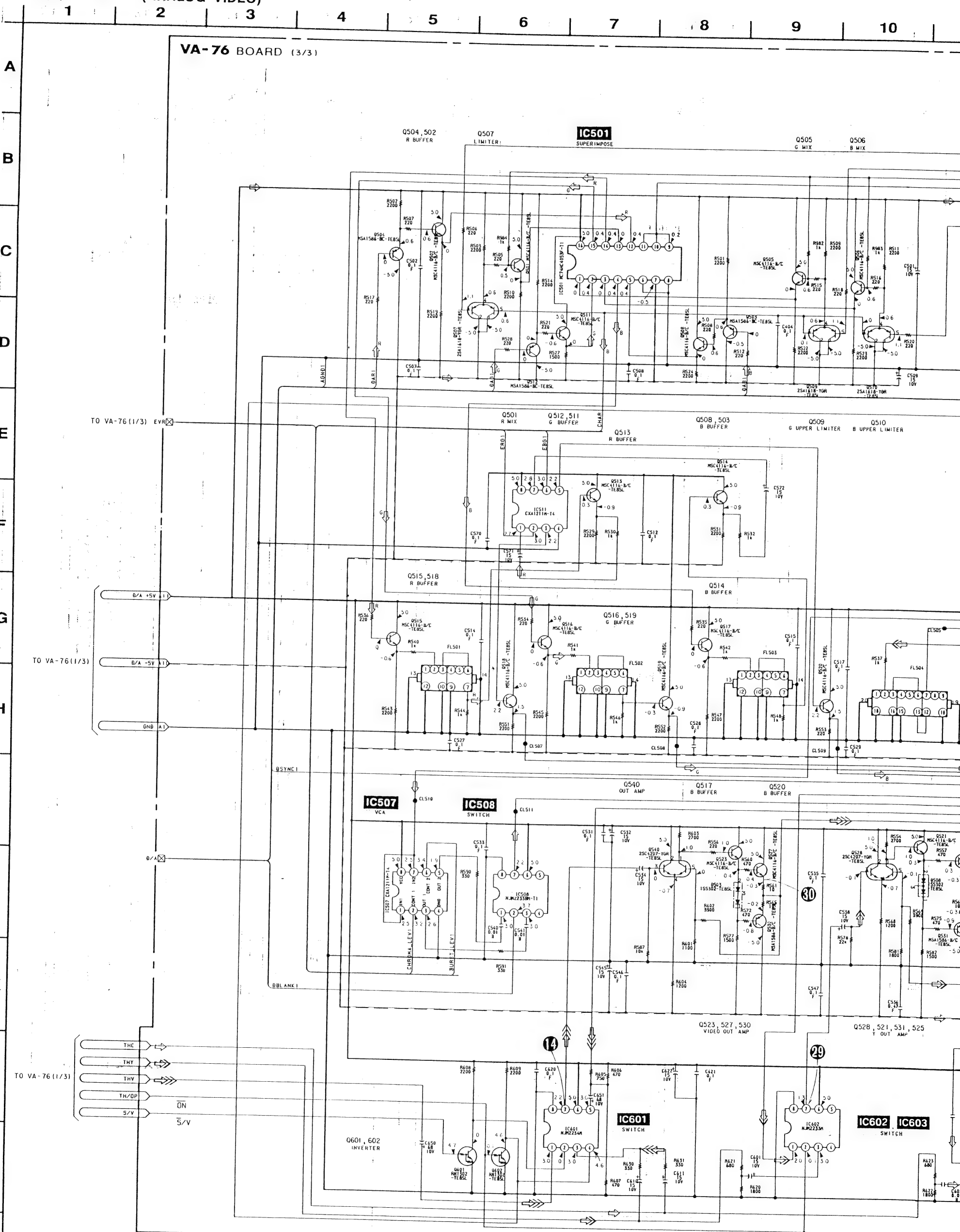
• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB	⇒	⇒⇒	⇒⇒⇒

• SIGNAL PATH

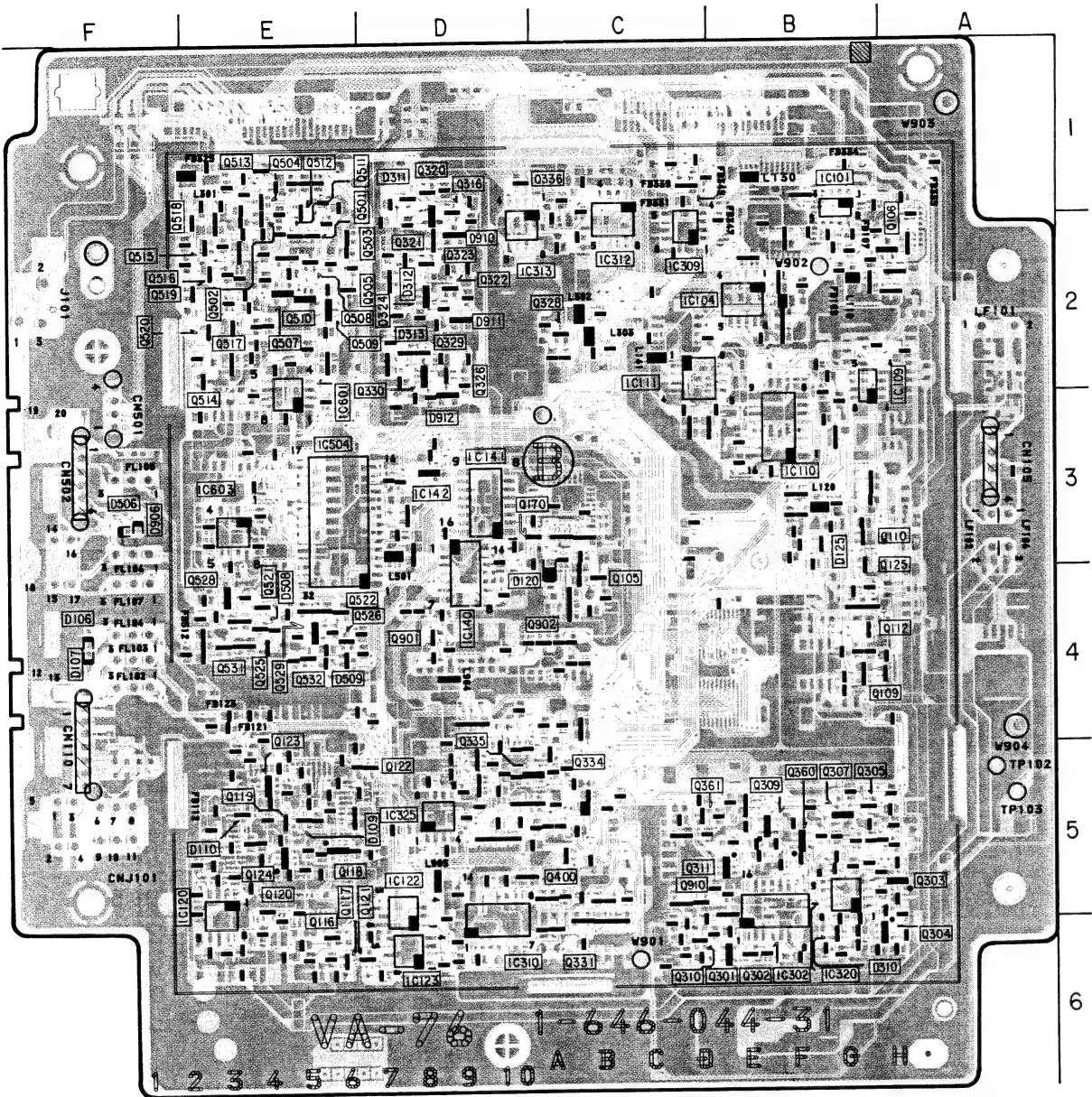
VIDEO SIGNAL	REC	P
ANALOG R		⇒
ANALOG G		⇒
ANALOG B		⇒

VA-76(B) — 3/3 — (ANALOG VIDEO)

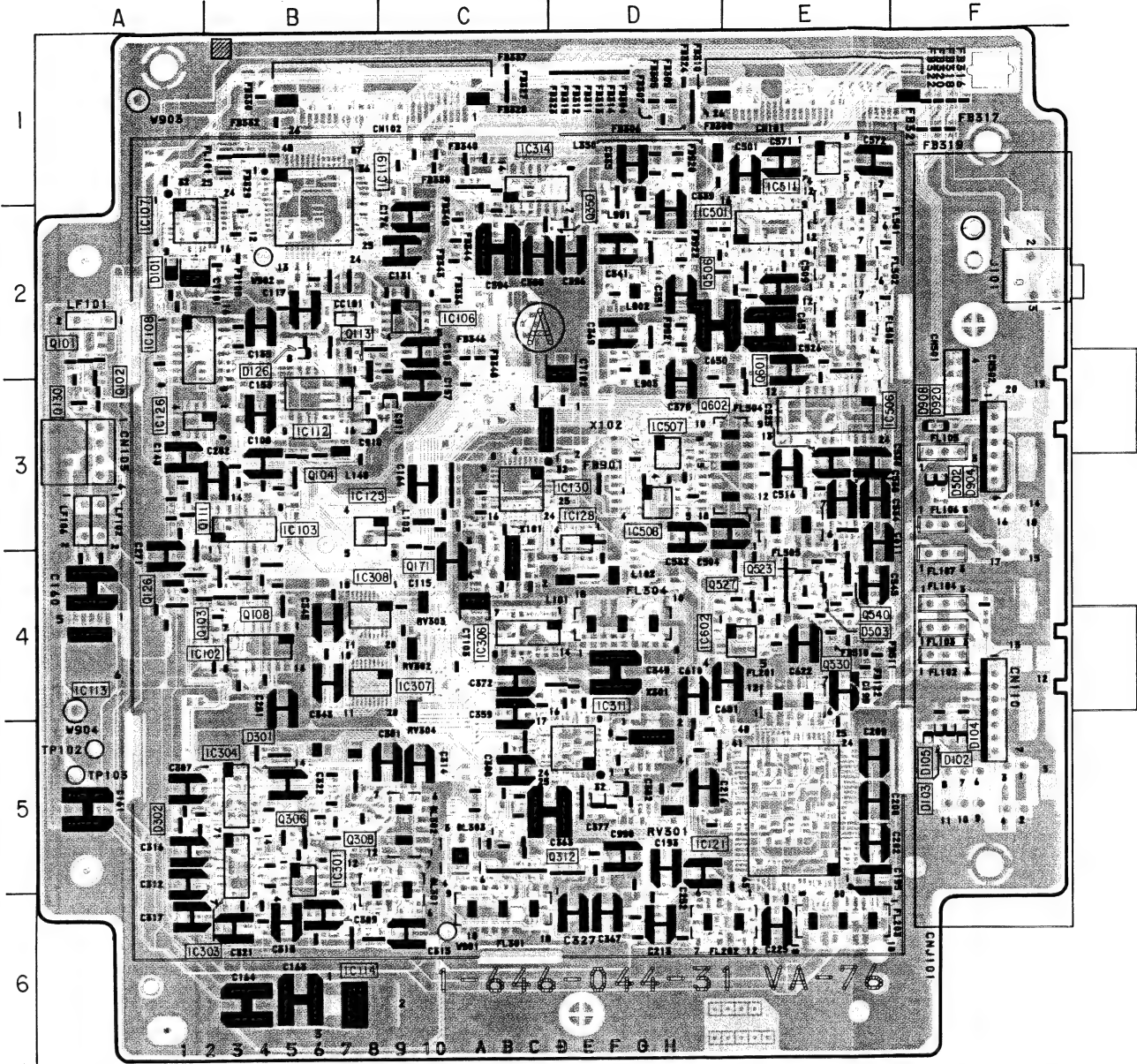




VA-76(B) (ANALOG VIDEO)



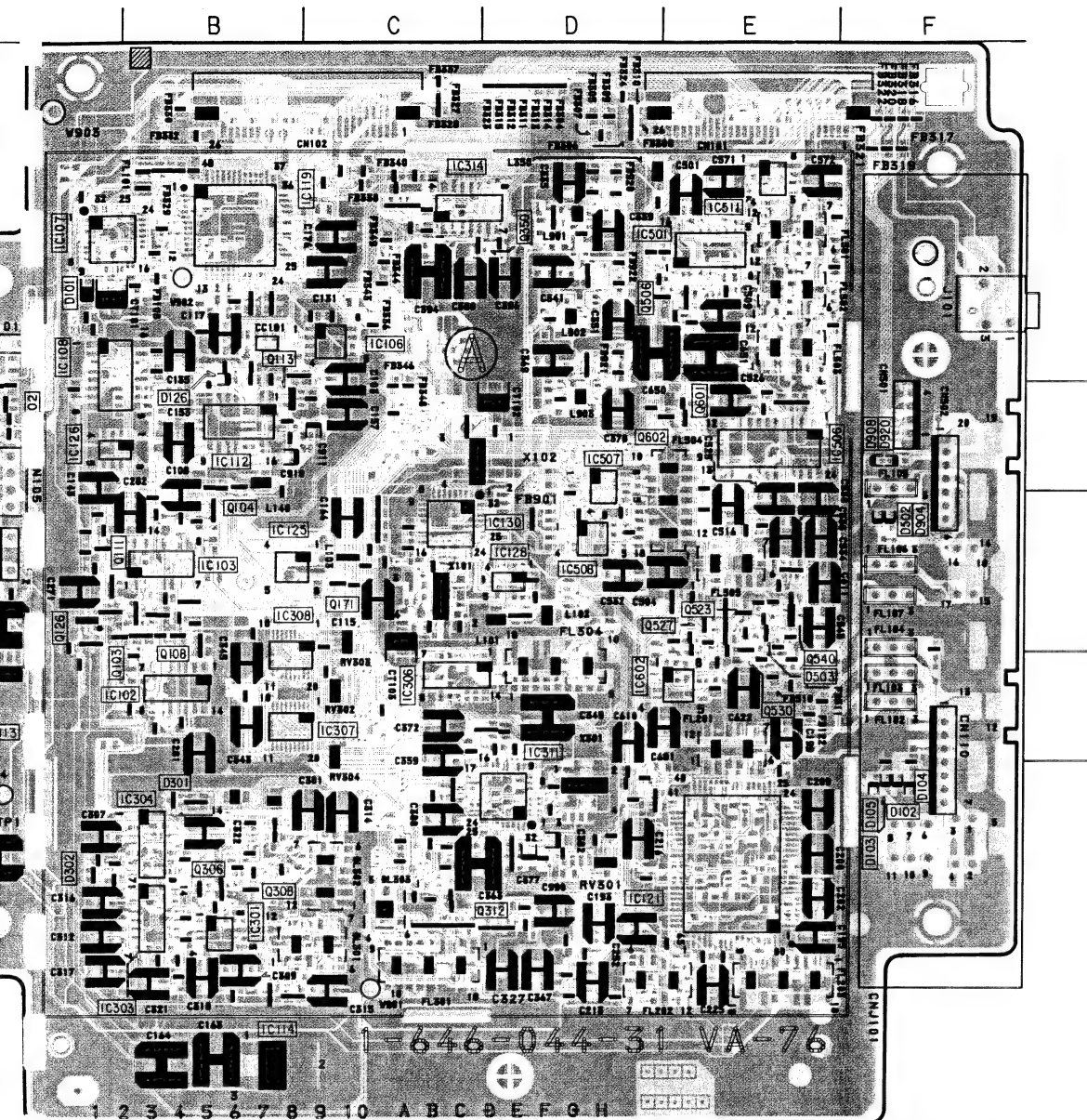
VA-76(B) -SOLDERING SIDE-  
1-646-044-31



VA-76(B) -COMPONENT SIDE-  
1-646-044-31

VA-76(B) BOARD

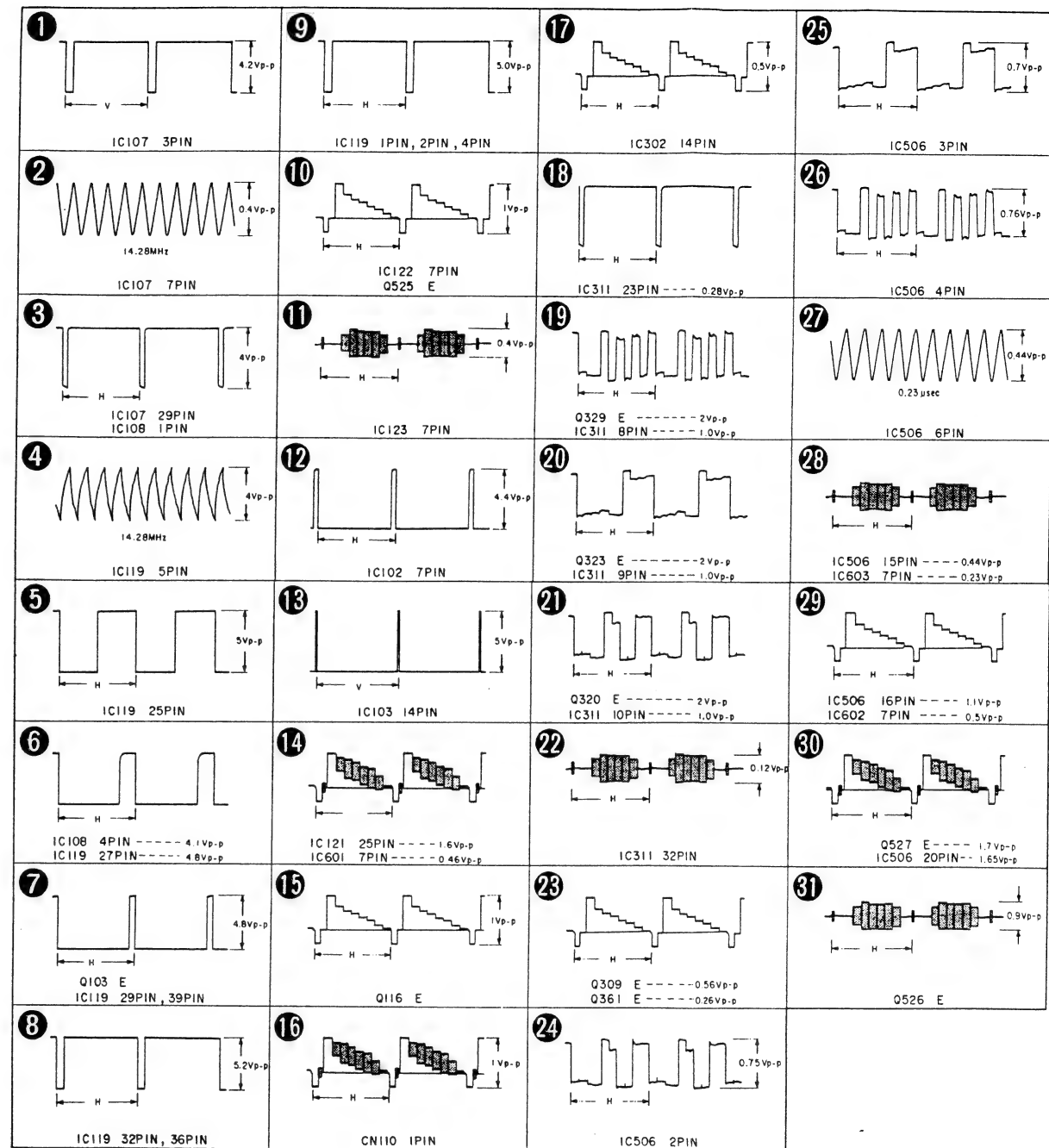
CN101	E-1	S	D508	E-4	FB308	D-1	S	FB330	B-1	S	FB920	D-1	S	IC102	B-4	S	IC302	B-5	S	J101	F-2	S	LF101	A-2		Q121	D-6	Q320	D-1	Q506	E-2	S	Q528	E4			
CN102	C-1	S	D509	E-4	FB309	D-1	S	FB331	C-1		FB921	D-2	S	IC103	B-3	S	IC303	B-5	S				LF102	A-3		Q122	E-5	Q321	D-2	Q507	E-2		Q529	E4			
CN105	A-3	S	D910	D-2	FB310	D-1	S	FB332	B-1	S	FB922	E-2	S	IC104	B-2		IC304	B-5	S	L101	D-4	S	LF106	A-3		Q123	E-5	Q322	D-2	Q508	E-2		Q530	E4	S		
CN110	F-5	S	D911	D-2	FB311	D-1	S	FB334	B-1					IC106	C-2	S	IC306	C-4	S	L102	D-4	S				Q124	E-5	Q323	D-2	Q509	E-2		Q531	E4			
CN502	F-3	S	D912	D-3	FB312	D-1	S	FB335	A-1		FL102	F-4	S	IC107	A-2	S	IC307	B-4	S	L103	C-3	S		Q101	A-2	S	Q125	B-3	Q324	D-2	Q510	E-2		Q532	E4		
					FB313	D-1	S	FB336	C-2	S	FL103	F-4	S	IC108	A-2	S	IC308	B-4	S	L110	B-2		Q102	A-2	S	Q126	A-4	S	Q326	D-3	Q511	E-2		Q540	E4	S	
CT101	A-2	S	DL301	C-6	S	FB314	D-1	S	FB337	C-1	S	FL104	F-4	S	IC109	B-2		IC309	C-2		L120	B-3		Q103	A-4	S	Q170	C-3	Q328	C-2	Q512	E-1		Q601	E3	S	
CT102	D-2	S	DL302	C-5	S	FB315	D-1	S	FB338	C-1	S	FL105	F-3	S	IC110	B-3		IC310	D-6		L130	B-1		Q104	B-3	S	Q171	C-3	Q329	D-2	Q513	E-1		Q602	E3	S	
			DL303	C-5	S	FB316	F-1	S	FB339	C-1	S	FL106	F-3	S	IC111	C-2		IC311	D-5	S	L140	B-3	S	Q105	C-4		Q301	B-6	Q330	D-2	Q514	E-2		Q901	D4		
D101	A-2	S				FB317	F-1	S	FB340	C-1	S	FL107	F-4	S	IC112	B-3	S	IC312	C-2		L141	C-2		Q106	A-2		Q302	B-6	Q331	C-6	Q515	E-2		Q902	C4		
D109	E-5		FB107	B-2		FB318	F-1	S	FB343	C-2	S	FL201	E-4	S	IC113	A-4	S	IC313	D-2		L301	E-1		Q108	B-4	S	Q303	A-5	Q334	C-5	Q516	E-2		Q910	C5		
D110	E-5		FB108	B-2	S	FB319	F-1	S	FB344	C-2	S	FL202	E-6	S	IC114	B-6	S	IC314	C-1	S	L302	C-2		Q109	B-4		Q304	A-6	Q335	D-5	Q517	E-2					
D125	B-3		FB109	B-2		FB320	F-1	S	FB345	C-1		FL203	E-6	S	IC119	B-2	S	IC320	B-5		L303	C-2		Q110	B-3		Q305	B-5	Q336	D-1	Q518	E-2		RV301	D5	S	
D126	B-2	S	FB112	E-5		FB321	F-1	S	FB346	C-2	S	FL301	C-6	S	IC121	E-5	S	IC501	E-2	S	L350	D-1	S	Q111	A-3	S	Q306	B-5	Q350	C-2	S	Q519	E-2		RV302	C4	S
D301	B-5	S	FB121	E-4		FB322	F-1	S	FB347	B-2		FL304	D-4	S	IC122	D-5		IC504	E-3		L501	D-3		Q112	B-4		Q307	B-5	Q360	B-5	Q520	E-2		RV303	C4	S	
D302	A-5	S	FB122	E-4	S	FB323	D-1	S	FB348	C-2	S	FL501	E-2	S	IC123	D-6		IC506	E-3	S	L901	D-1	S	Q113	B-2	S	Q308	B-5	Q361	C-5	Q521	E-4		RV304	C4	S	
D310	B-6		FB123	E-5		FB324	D-1	S	FB349	C-2	S	FL502	E-2	S	IC125	B-3	S	IC507	D-3	S	L902	D-2	S	Q116	E-6		Q309	B-5	Q501	E-2	Q522	E-4					
D311	D-1		FB304	D-1	S	FB325	E-1		FB510	E-4	S	FL503	E-2	S	IC126	A-3	S	IC508	D-3	S	L903	D-2	S	Q117	E-6		Q310	C-6	Q502	E-1	Q523	E-4	S	X101	C4	S	
D312	D-2		FB305	D-1	S	FB327	C-1	S	FB511	E-4	S	FL504	E-3	S	IC128	D-3	S	IC511	E-1	S	L904	D-4		Q118	E-5		Q311	B-5	Q503	F-2	Q525	E-4		X102	D3	S	
D313	D-2		FB306	D-1	S	FB328	C-1	S	FB512	E-4		FL505	E-3	S	IC130	C-3	S	IC601	E-2		L905	D-5		Q119	E-5		Q312	D-5	Q504	E-1	Q526	E-4		X301	D5	S	
D503	E-4	S	FB307	D-1	S	FB329	B-1	S	FB901	D-3	S			IC301	B-5	S	IC602	E-4	S				Q120	D-6		Q316	D-1	Q505	E-2	Q527	E-4	S					
																	IC603	E-3																S:SOLDERING SIDE			



VA-76(B) -COMPONENT SIDE-  
1-646-044-31

02	B-5	J101	F-2	S	LF101	A-2	Q121	D-6	Q320	D-1	Q506	E-2	S	Q528	E-4
03	B-5	S			LF102	A-3	Q122	E-5	Q321	D-2	Q507	E-2		Q529	E-4
04	B-5	S	L101	D-4	S	LF106	A-3	Q123	E-5	Q322	D-2	Q508	E-2	Q530	E-4 S
06	C-4	S	L102	D-4	S		Q124	E-5	Q323	D-2	Q509	E-2		Q531	E-4
07	B-4	S	L103	C-3	S	Q101	A-2	Q125	B-3	Q324	D-2	Q510	E-2	Q532	E-4
08	B-4	S	L110	B-2	S	Q102	A-2	Q126	A-4	Q326	D-3	Q511	E-2	Q540	E-4 S
09	C-2	S	L120	B-3	S	Q103	A-4	Q170	C-3	Q328	C-2	Q512	E-1	Q601	E-3 S
10	D-6	S	L130	B-1	S	Q104	B-3	Q171	C-3	Q329	D-2	Q513	E-1	Q602	E-3 S
11	D-5	S	L140	B-3	S	Q105	C-4	Q301	B-6	Q330	D-2	Q514	E-2	Q901	D-4
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13	D-2	S	L301	E-1	S	Q108	B-4	Q303	A-5	Q334	C-5	Q516	E-2	Q910	C-5
14	O-1	S	L302	C-2	S	Q109	B-4	Q304	A-6	Q335	D-5	Q517	E-2		
20	B-5	S	L303	C-2	S	Q110	B-3	Q305	B-5	Q336	D-1	Q518	E-2	RV301	D-5 S
01	E-2	S	L350	D-1	S	Q111	A-3	Q306	B-5	Q350	C-2	Q519	E-2	RV302	C-4 S
04	E-3	S	L501	D-3	S	Q112	B-4	Q307	B-5	Q360	B-5	Q520	E-2	RV303	C-4 S
06	E-3	S	L901	D-1	S	Q113	B-2	Q308	B-5	Q361	C-5	Q521	E-4	RV304	C-4 S
07	D-3	S	L902	D-2	S	Q116	E-6	Q309	B-5	Q501	E-2	Q522	E-4		
08	D-3	S	L903	D-2	S	Q117	E-6	Q310	C-6	Q502	E-1	Q523	E-4 S	X101	C-4 S
11	E-1	S	L904	D-4	S	Q118	E-5	Q311	B-5	Q503	F-2	Q525	E-4	X102	D-3 S
01	E-2	S	L905	D-5	S	Q119	E-5	Q312	D-5	Q504	E-1	Q526	E-4	X301	D-5 S
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S:SOLDERING SIDE



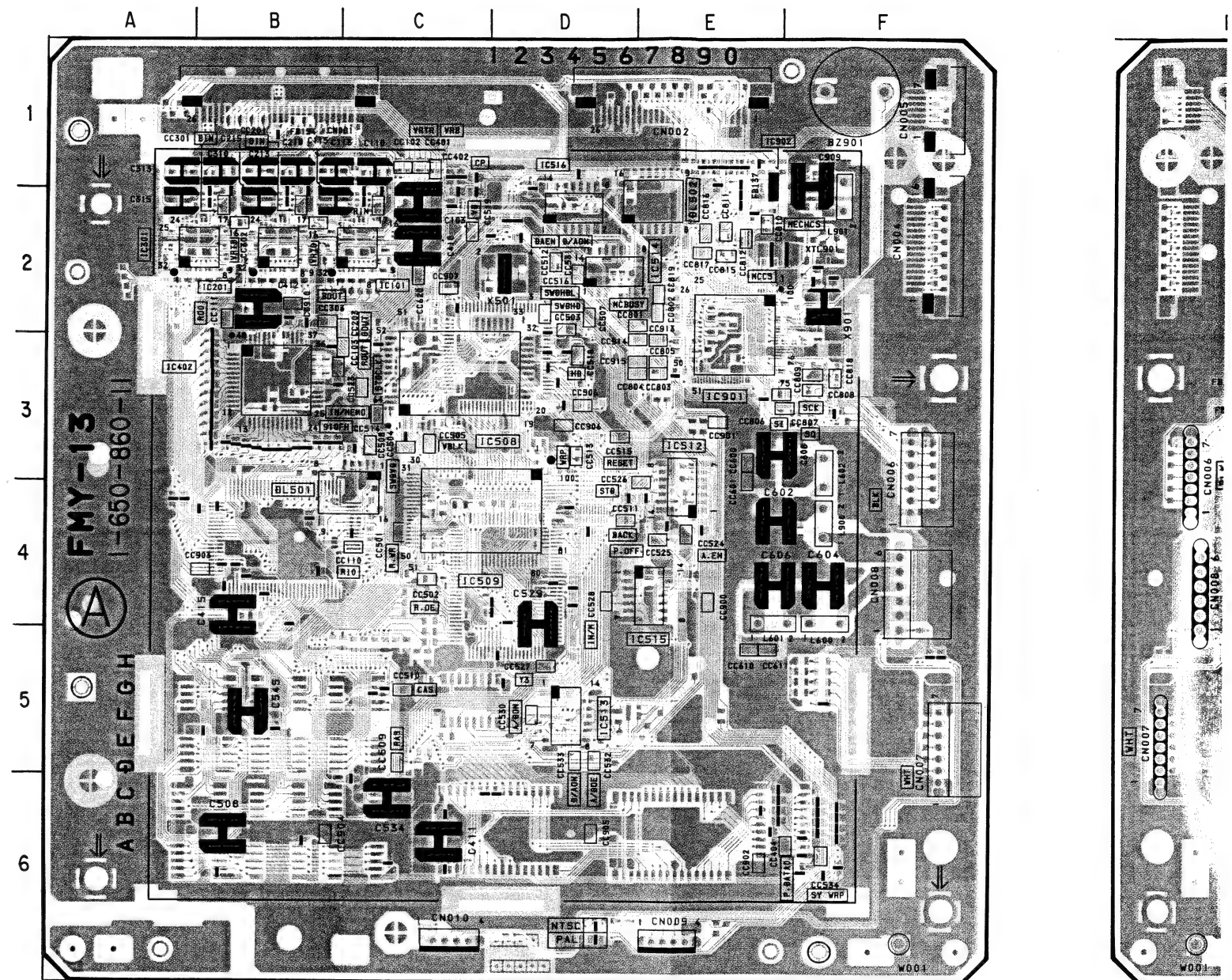


FMY-13P (FRAME MEMORY)

FMY-13P BOARD

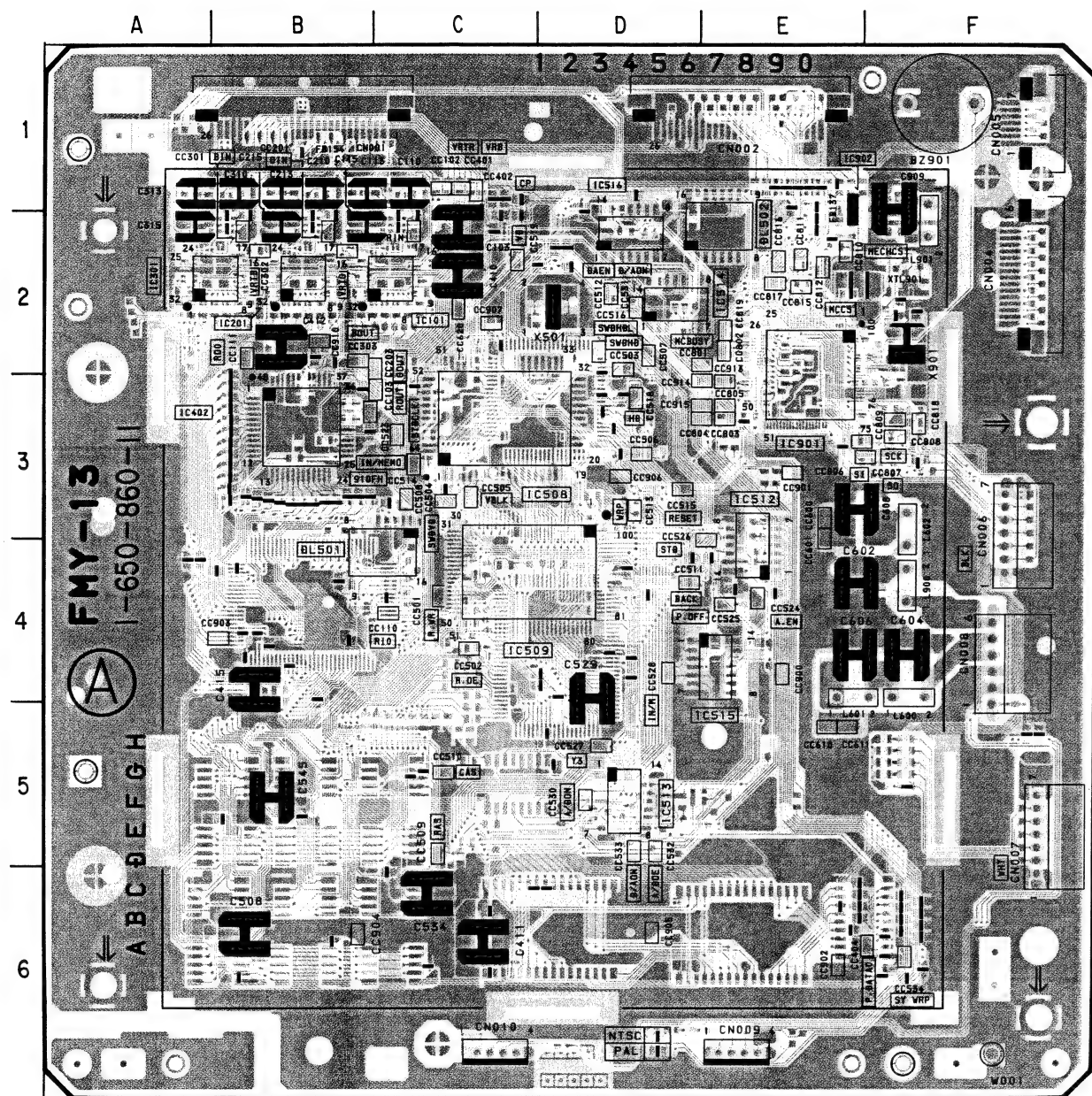
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CN007	F-5
CN008	F-4
CN009	E-6
CN010	C-6
D101	C-2 S
D201	B-2 S
D301	B-2 S
D901	E-1 S
D903	F-2 S
DL501	B-4
DL502	E-2
FL001	D-1
FL002	D-1
FL003	D-1
IC501	C-5 S
IC502	C-6 S
IC503	B-5 S
IC504	B-6 S
IC505	B-5 S
IC506	A-6 S
IC507	D-4 S
IC508	C-3
IC509	C-4
IC510	D-3 S
IC511	D-5 S
IC512	E-3
IC513	D-5
IC514	E-2
IC515	E-4
IC516	D-1
IC901	E-3
IC902	E-1
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L601	F-5
L602	F-3
L900	F-4
L901	F-2
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Q102	C-2 S
Q201	B-1 S
Q202	B-2 S
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Q302	B-2 S
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Q801	
Q902	F-2 S
X501	D-2
X901	F-2
XTL901	F-2

S:SOLDERING SIDE

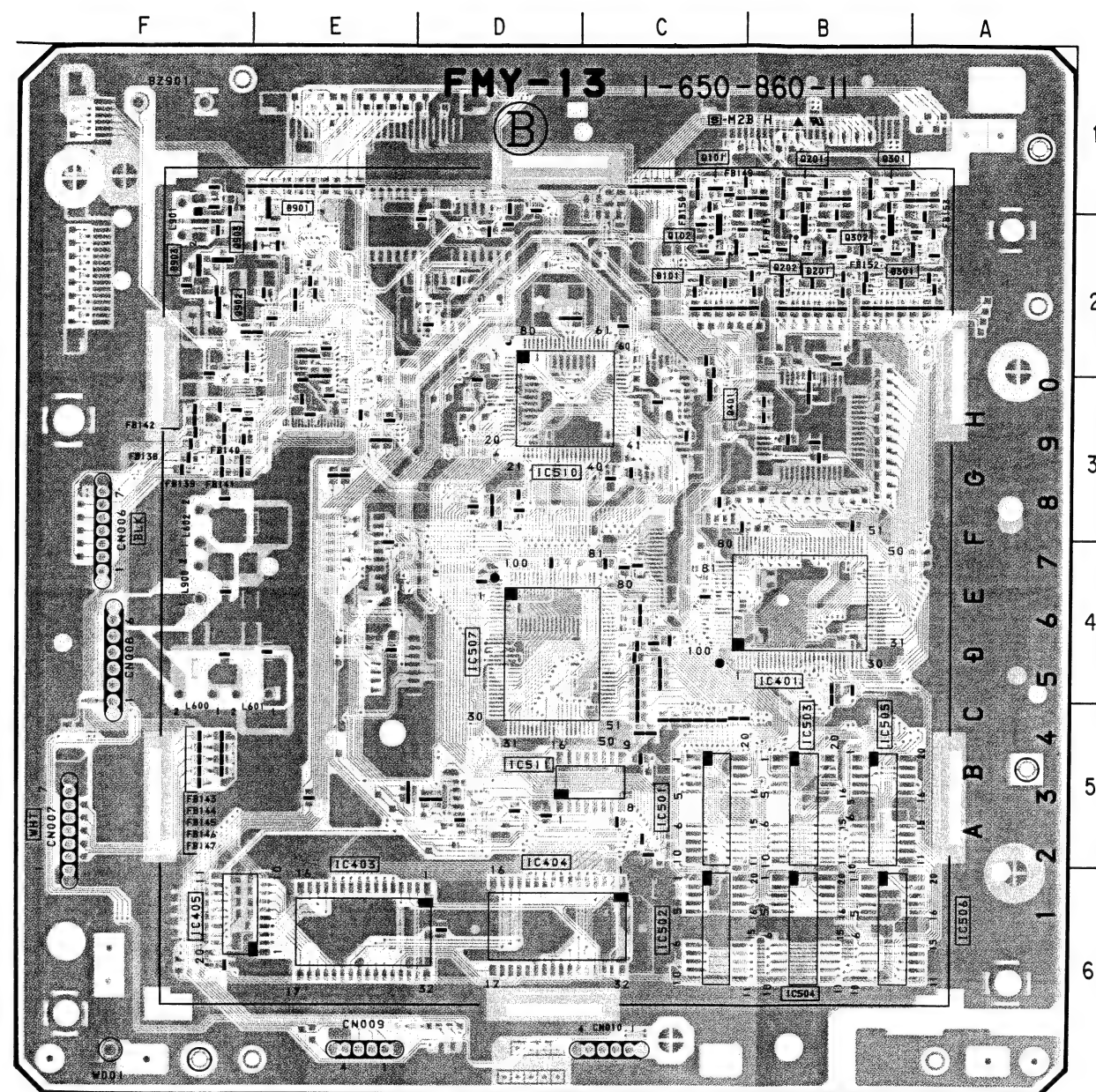


FMY-13 -COMPONENT SIDE-  
1-650-858-11

SIDE

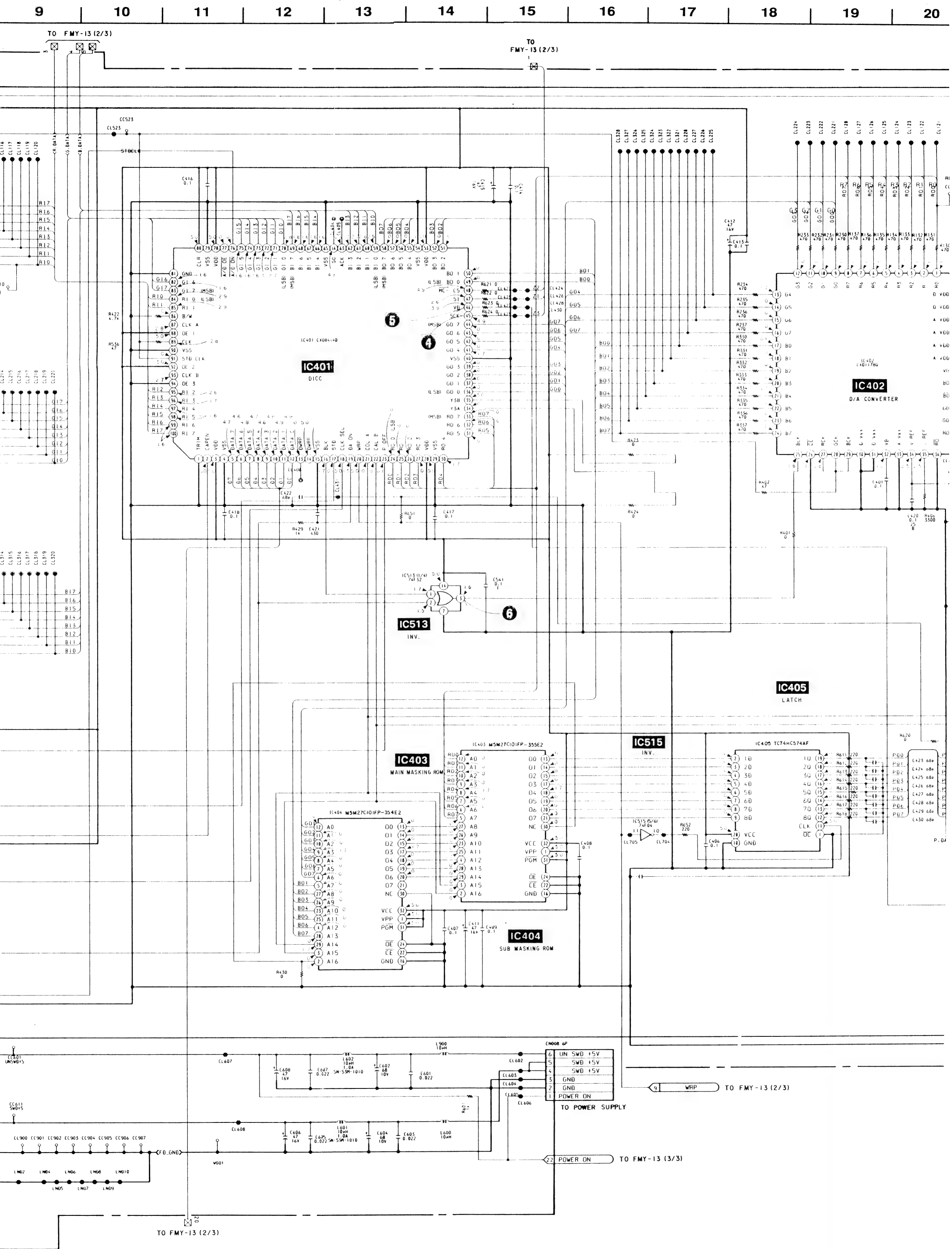


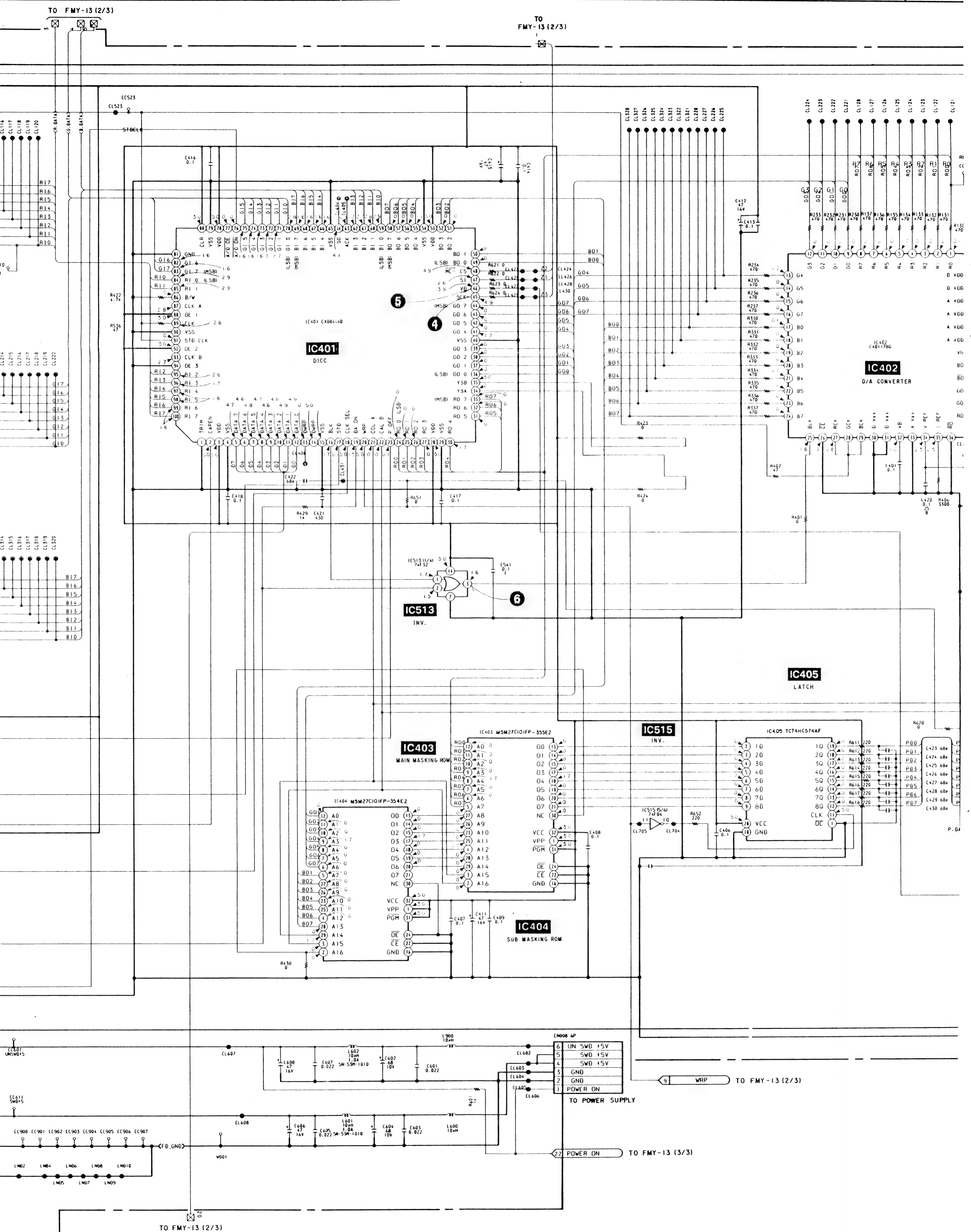
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1-650-858-11



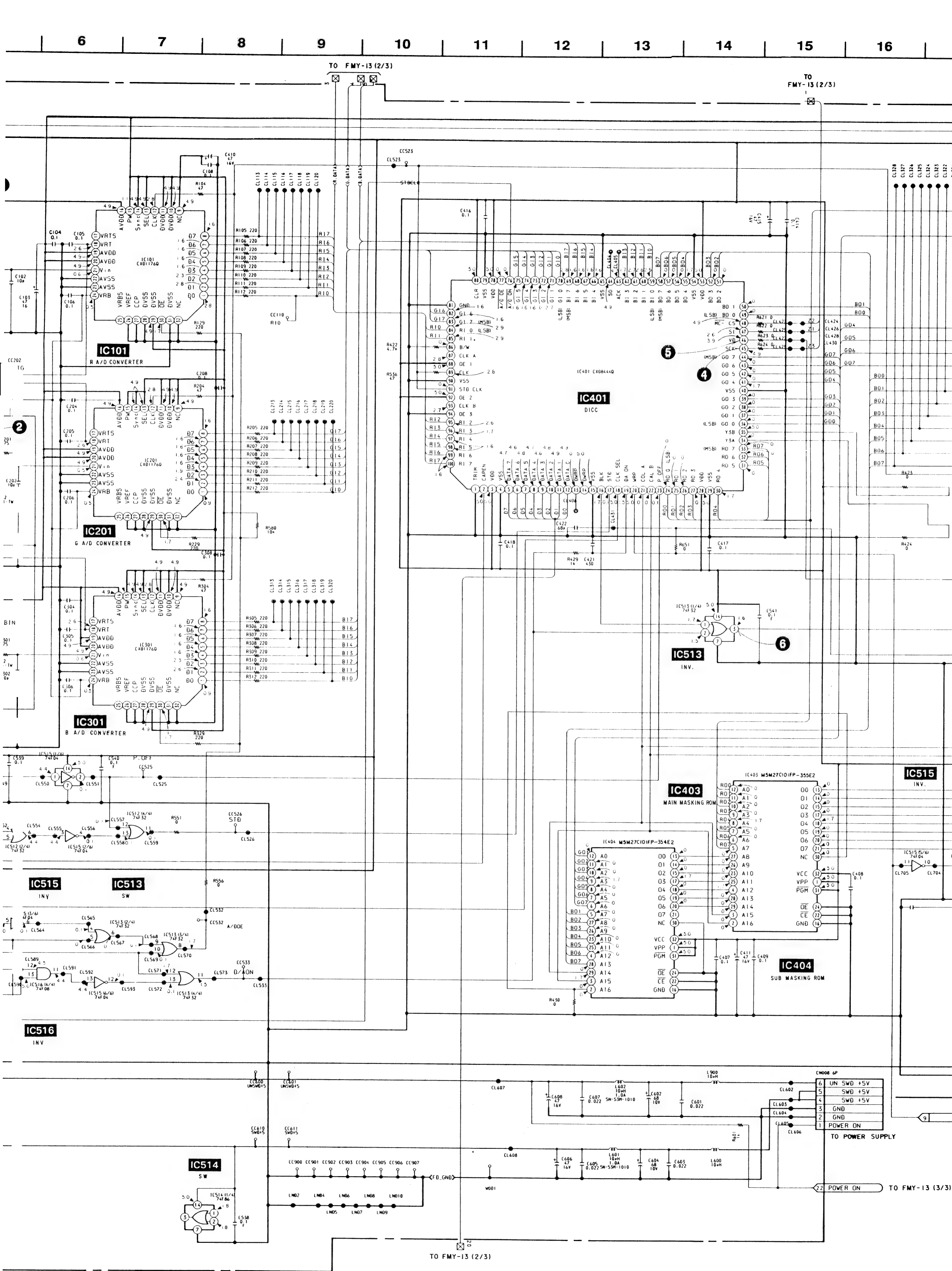
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1-650-858-11

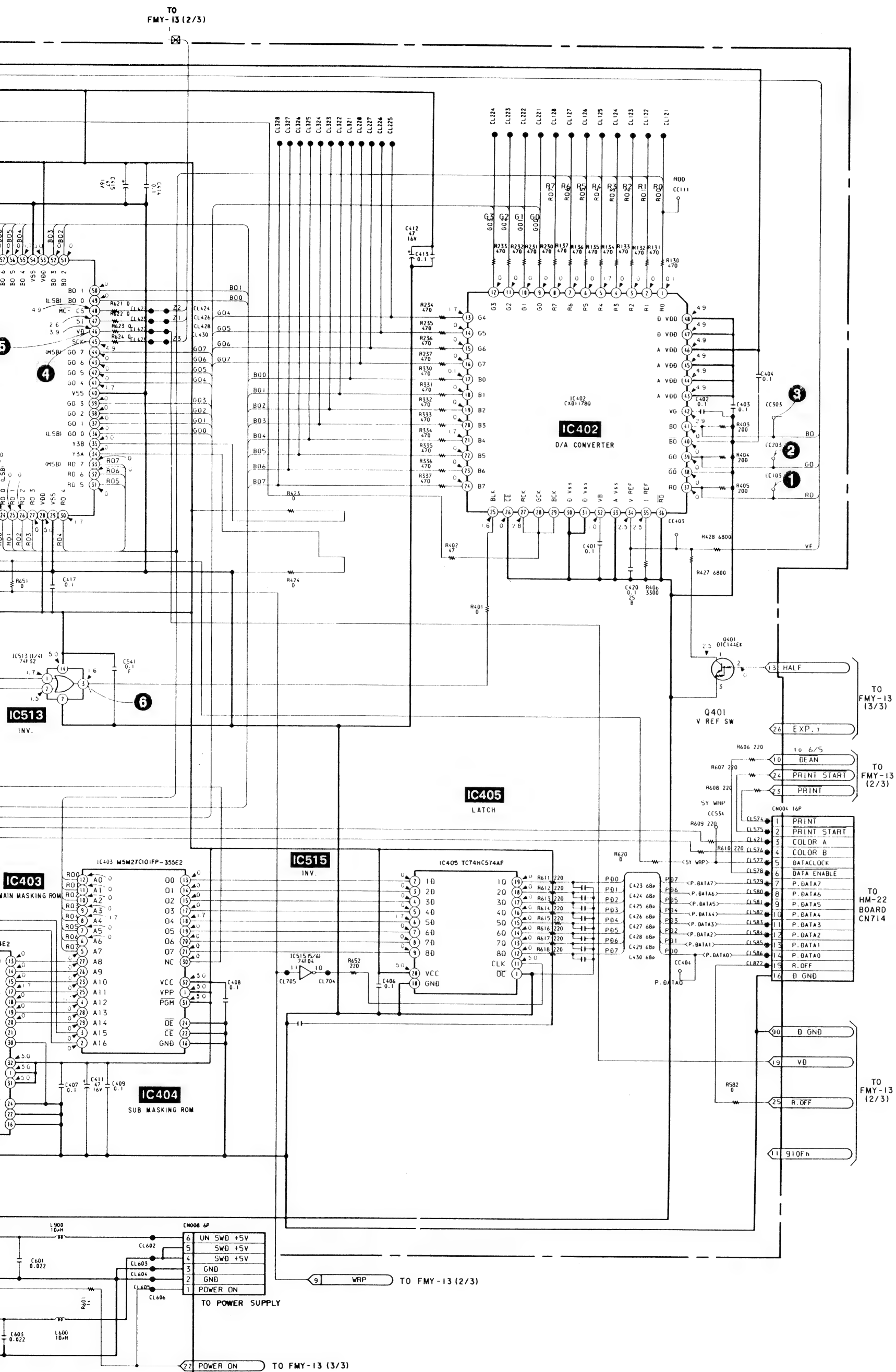








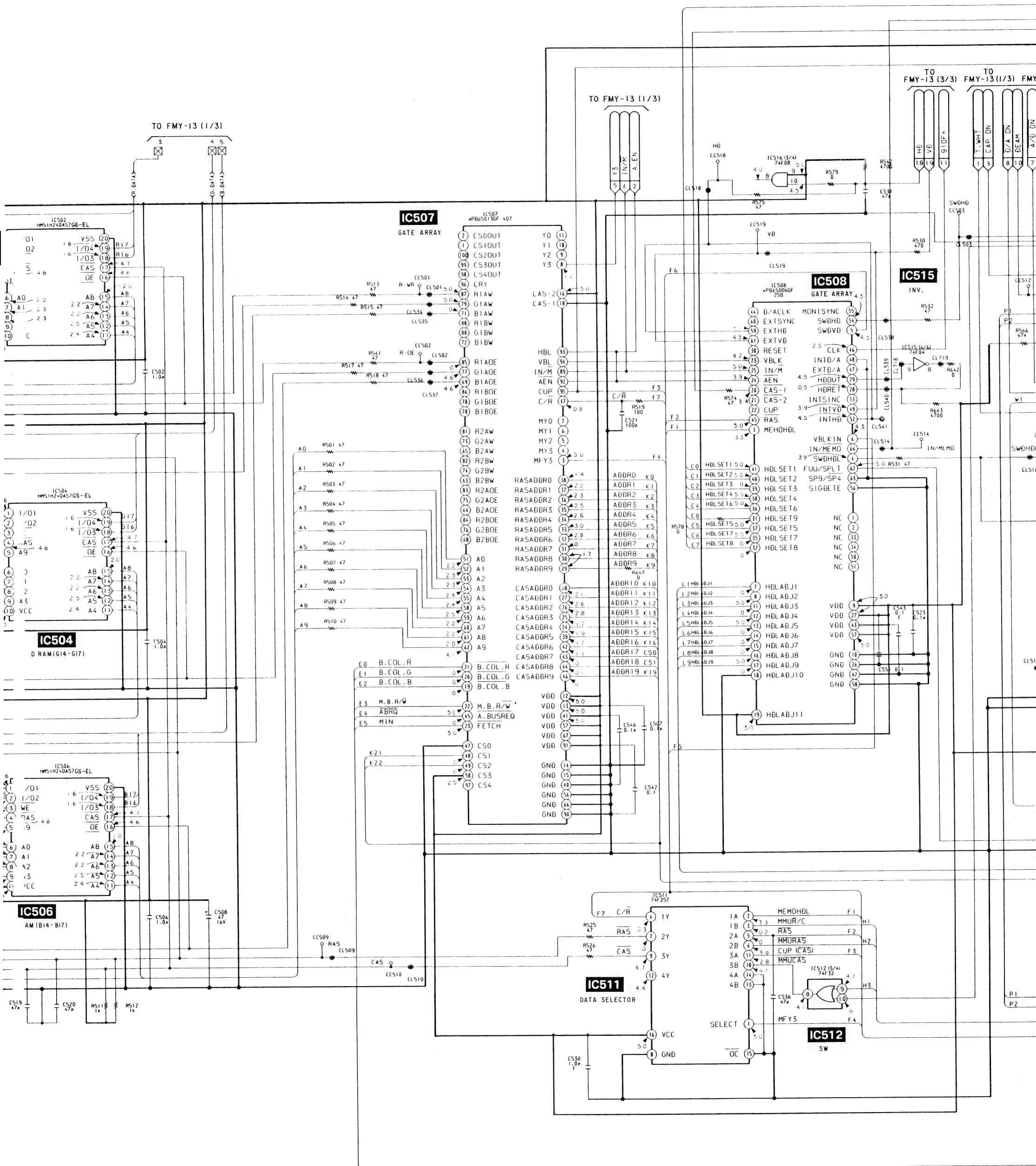




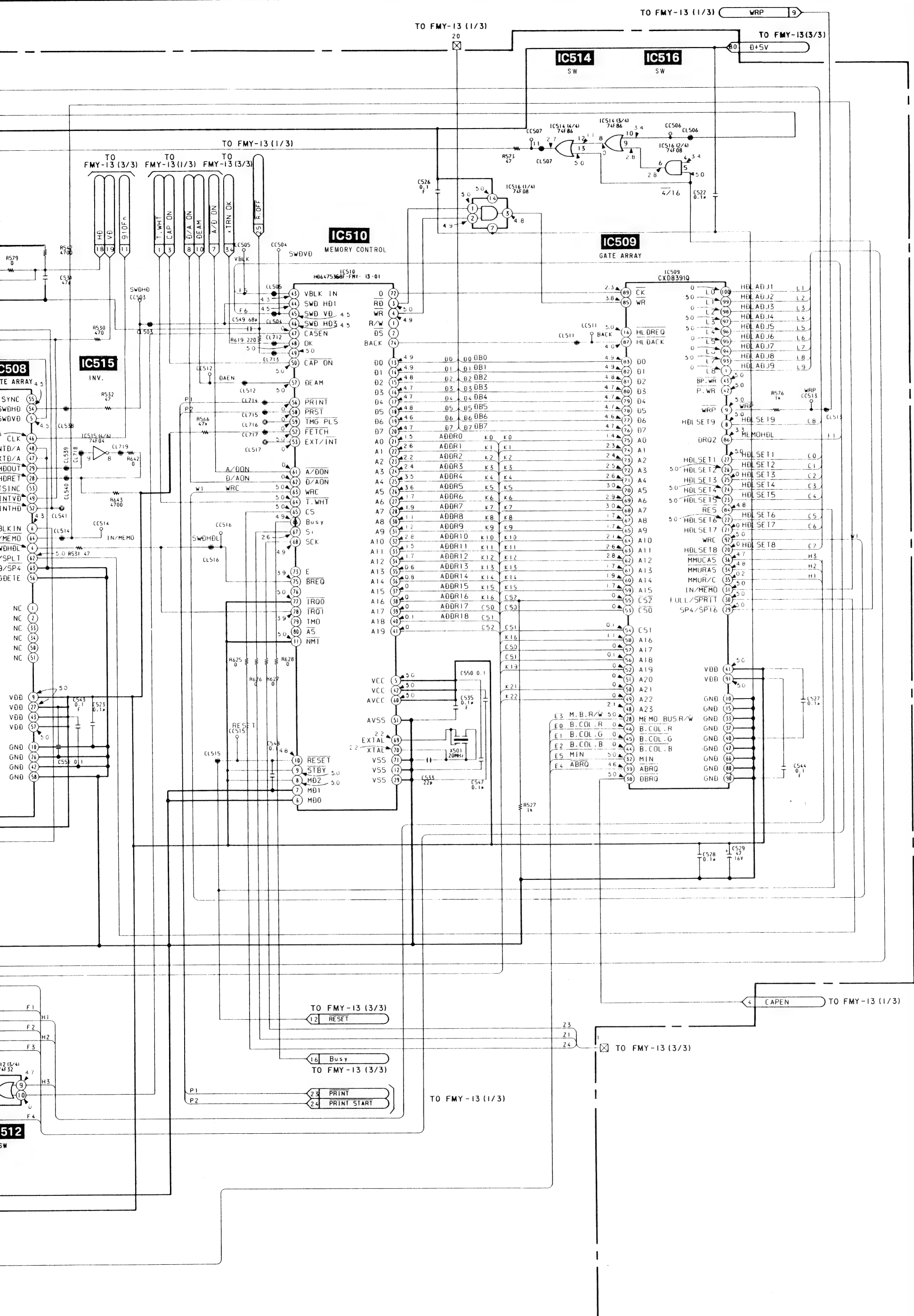








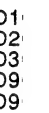




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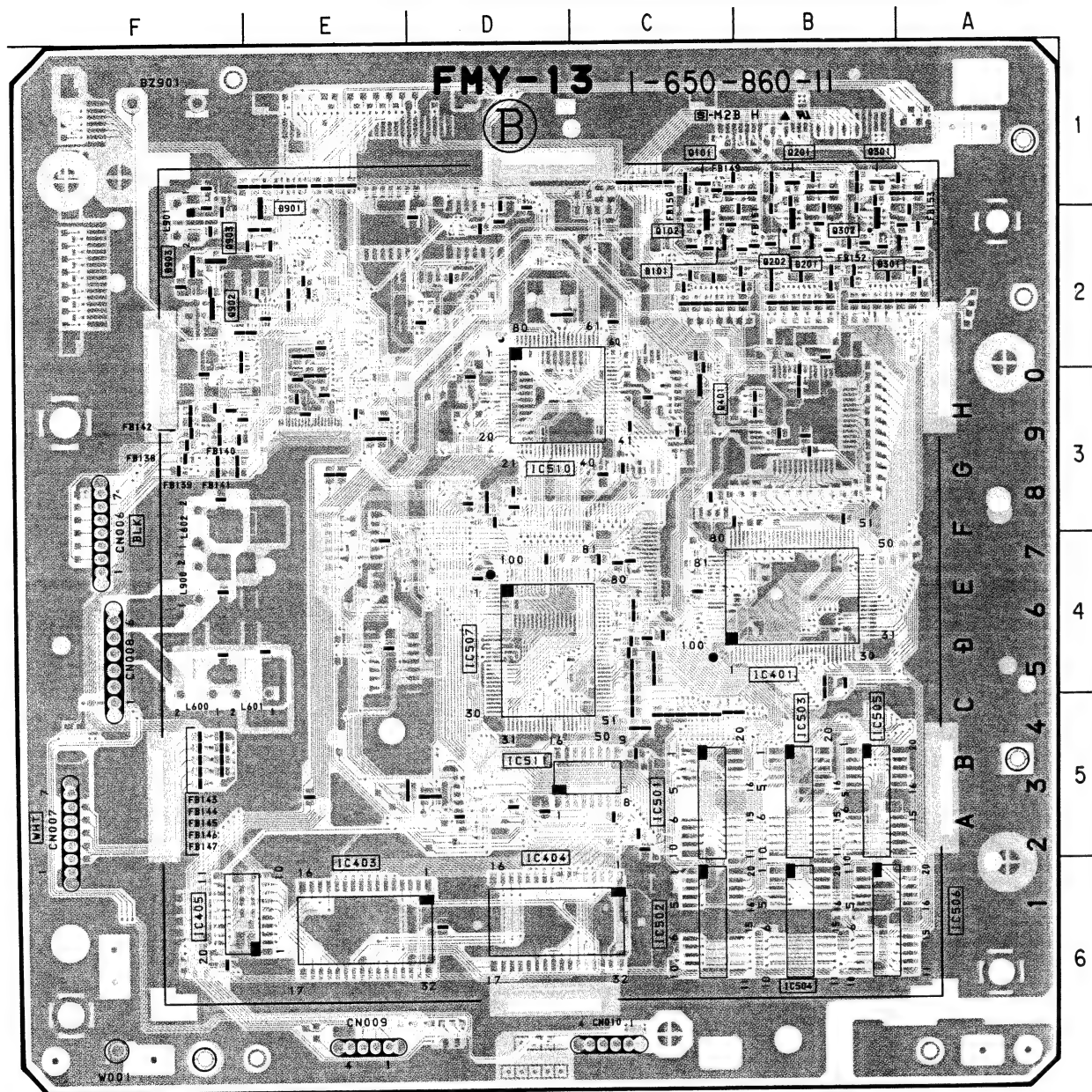
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FMY-13-SOLDERING SIDE-  
1-650-858-11

FMY-13P BOARD

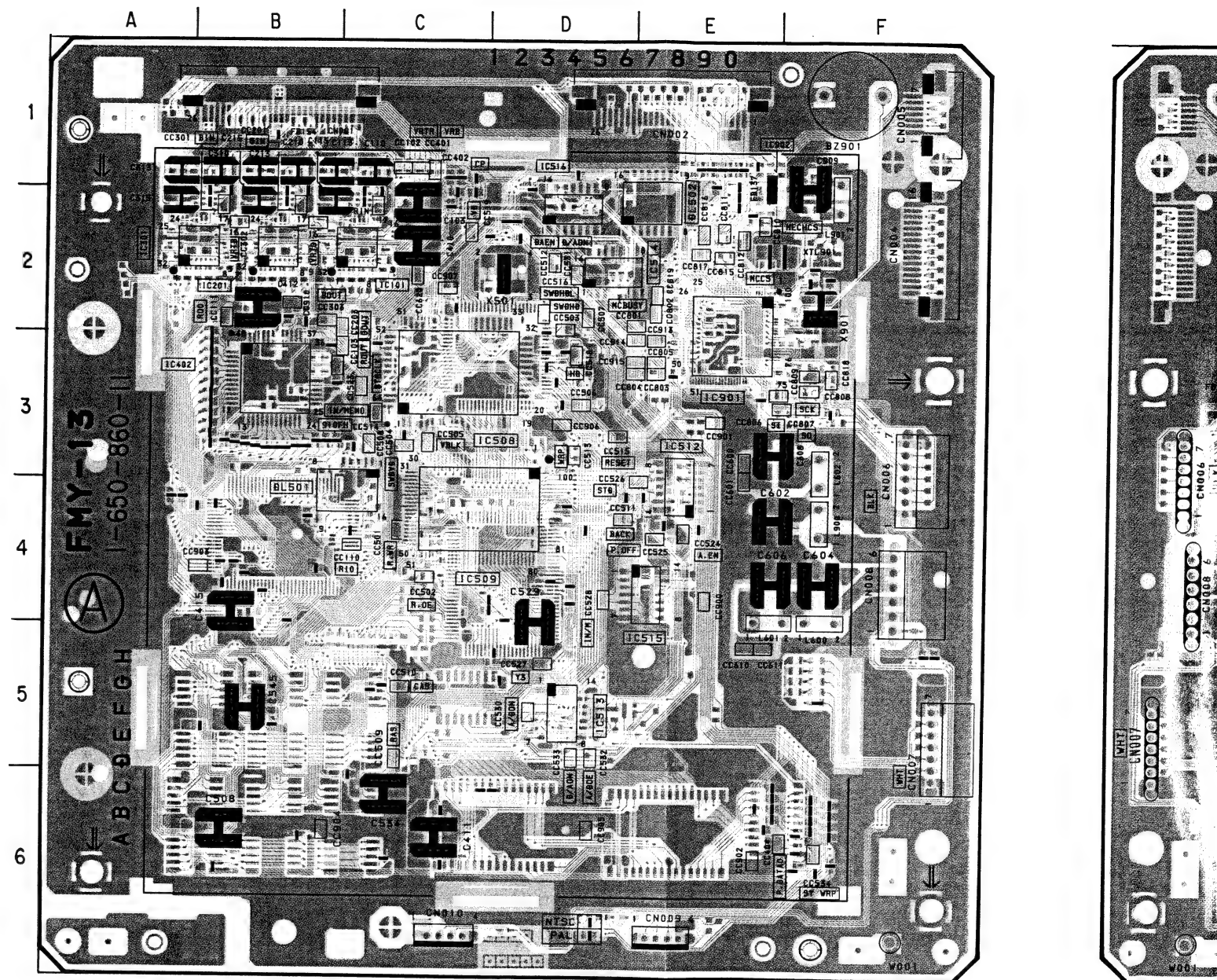
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CN002	E-1
CN004	F-2
CN005	F-1
CN006	F-3
CN007	F-5
CN008	F-4
CN009	E-6
CN010	C-6
D101	C-2 S
D201	B-2 S
D301	B-2 S
D901	E-1 S
D903	F-2 S
DL501	B-4
DL502	E-2
FL001	D-1
FL002	D-1
FL003	D-1
IC501	C-5 S
IC502	C-6 S
IC503	B-5 S
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IC507	D-4 S
IC508	C-3
IC509	C-4
IC510	D-3 S
IC511	D-5 S
IC512	E-3
IC513	D-5
IC514	E-2
IC515	E-4
IC516	D-1
IC901	E-3
IC902	E-1
L600	F-5
L601	E-5
L602	F-3
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L901	F-2
Q101	C-1 S
Q102	C-2 S
Q201	B-1 S
Q202	B-2 S
Q301	B-1 S
Q302	B-2 S
Q401	C-3 S
Q801	
Q902	F-2 S
X501	D-2
X901	F-2
XTL901	F-2
S:SOLDERING SIDE	

# FMY-13P (FRAME MEMORY)

## FMY-13P BOARD

BZ901	F-1	
CN001	B-1	
CN002	E-1	
CN004	F-2	
CN005	F-1	
CN006	F-3	
CN007	F-5	
CN008	F-4	
CN009	E-6	
CN010	C-6	
D101	C-2	S
D201	B-2	S
D301	B-2	S
D901	E-1	S
D903	F-2	S
DL501	B-4	
DL502	E-2	
FL001	D-1	
FL002	D-1	
FL003	D-1	
IC501	C-5	S
IC502	C-6	S
IC503	B-5	S
IC504	B-6	S
IC505	B-5	S
IC506	A-6	S
IC507	D-4	S
IC508	C-3	
IC509	C-4	
IC510	D-3	S
IC511	D-5	S
IC512	E-3	
IC513	D-5	
IC514	E-2	
IC515	E-4	
IC516	D-1	
IC901	E-3	
IC902	E-1	
L600	F-5	
L601	E-5	
L602	F-3	
L900	F-4	
L901	F-2	
Q101	C-1	S
Q102	C-2	S
Q201	B-1	S
Q202	B-2	S
Q301	B-1	S
Q302	B-2	S
Q401	C-3	S
Q801		
Q902	F-2	S
X501	D-2	
X901	F-2	
XTL901	F-2	

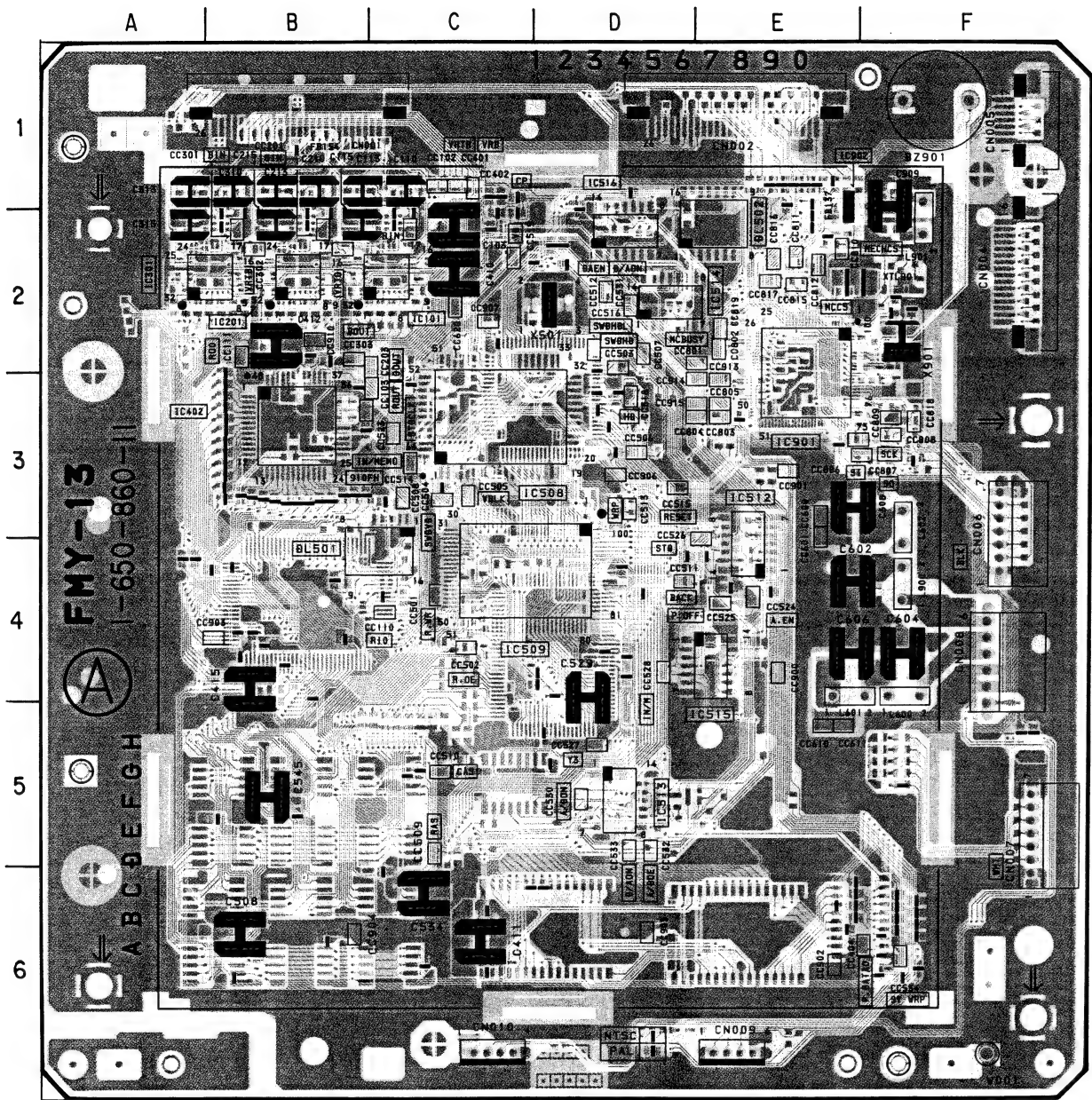
S:SOLDERING SIDE



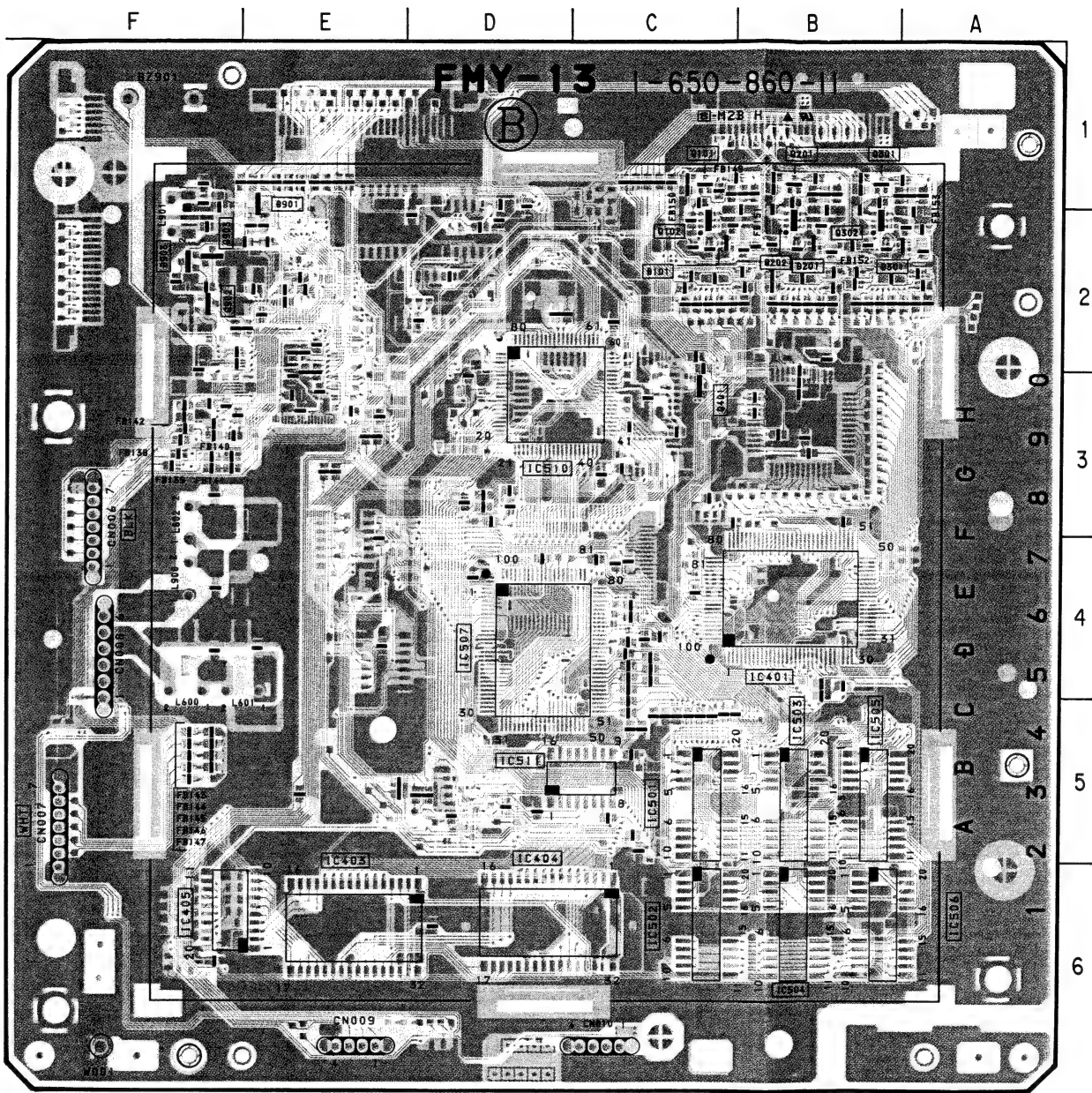
**FMY-13** -COMPONENT SIDE-  
1-650-858-11



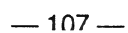
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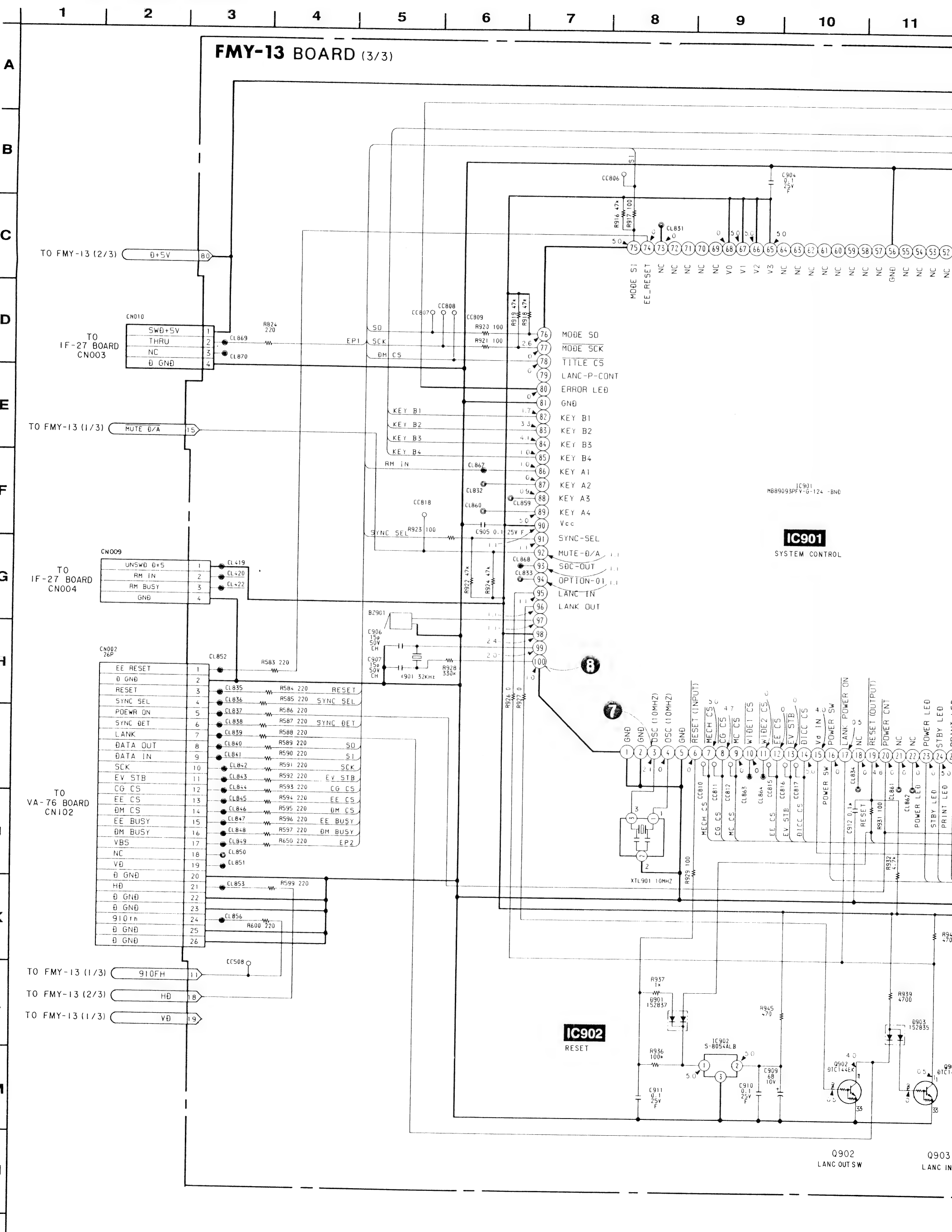


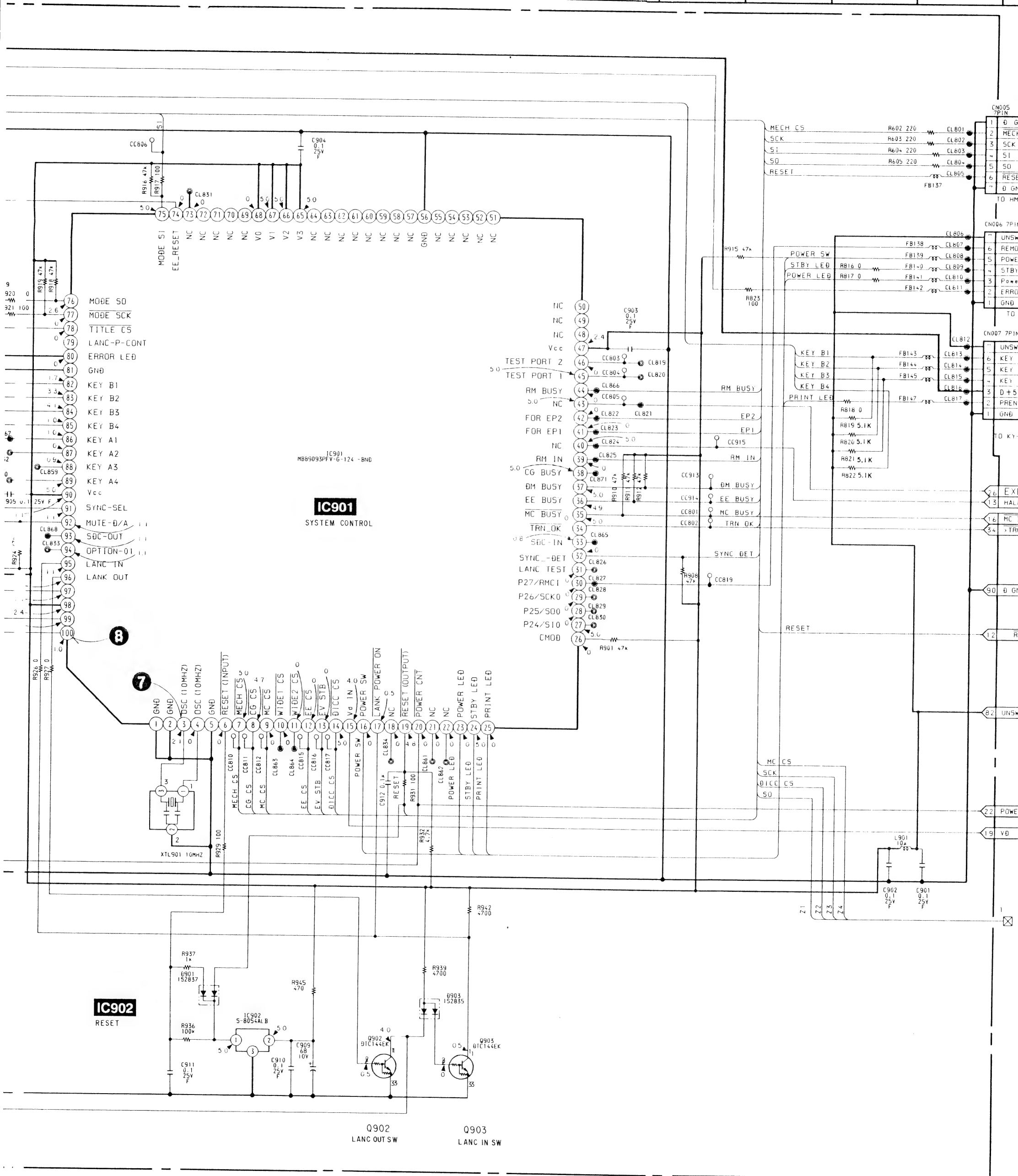
FMY-13 -COMPONENT SIDE-  
1-650-858-11



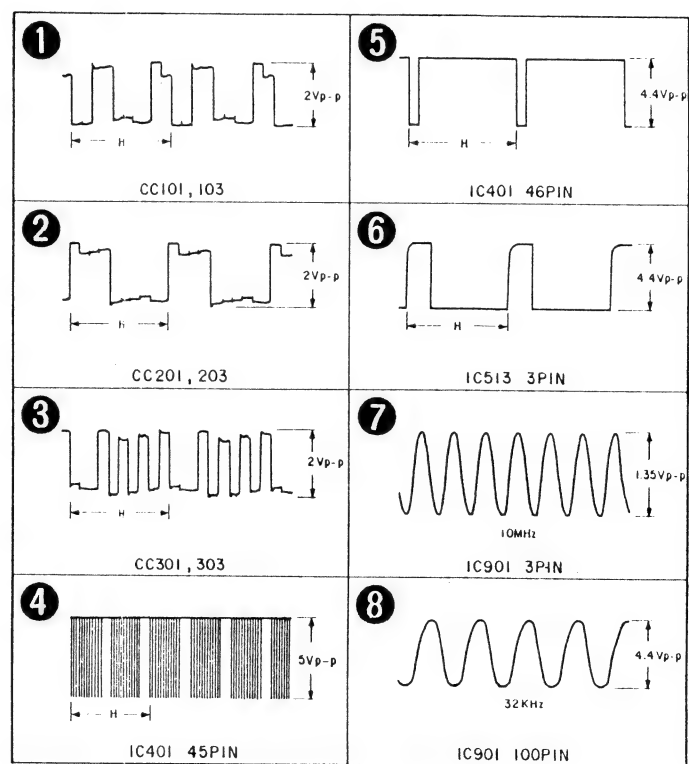
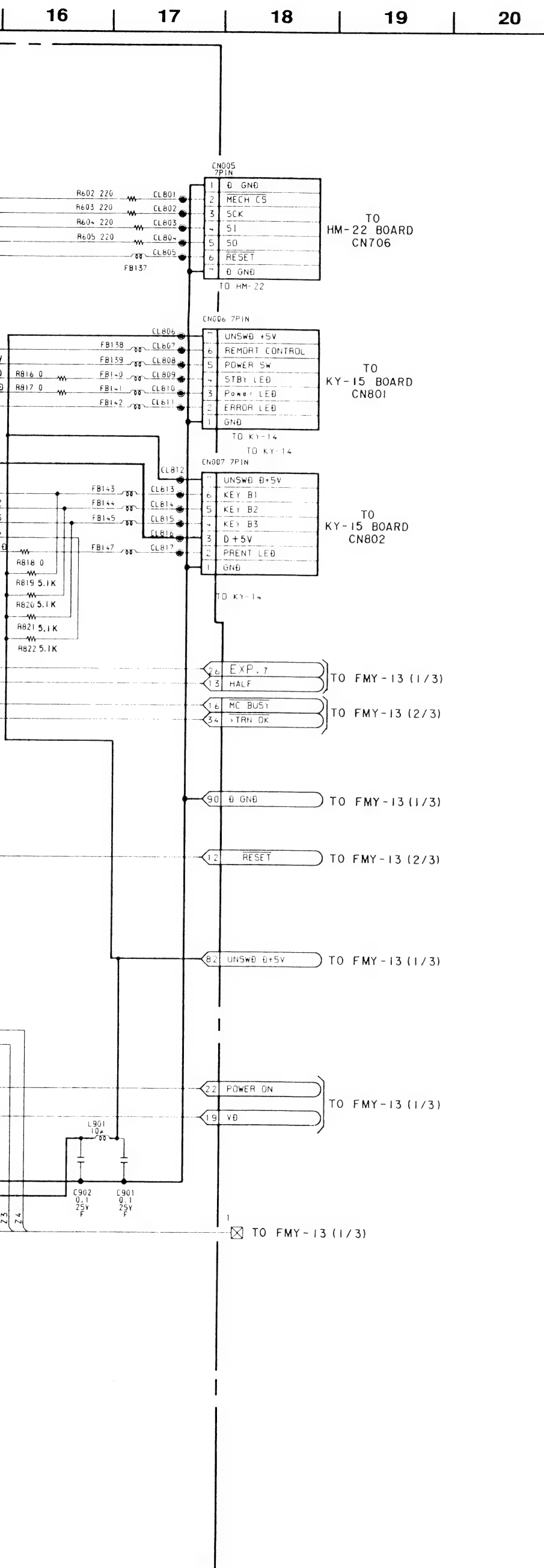
FMY-13 -SOLDERING SIDE-  
1-650-858-11



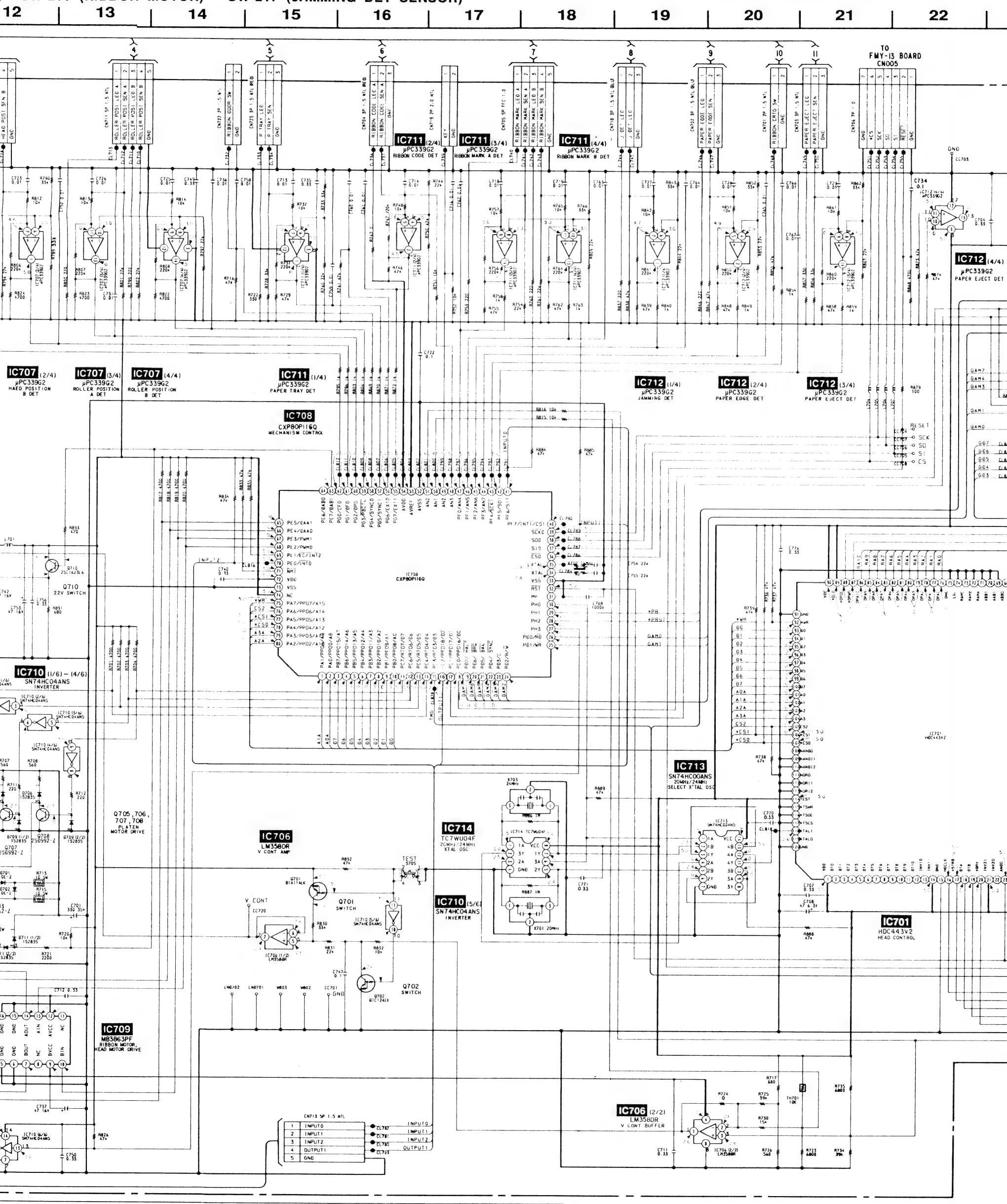




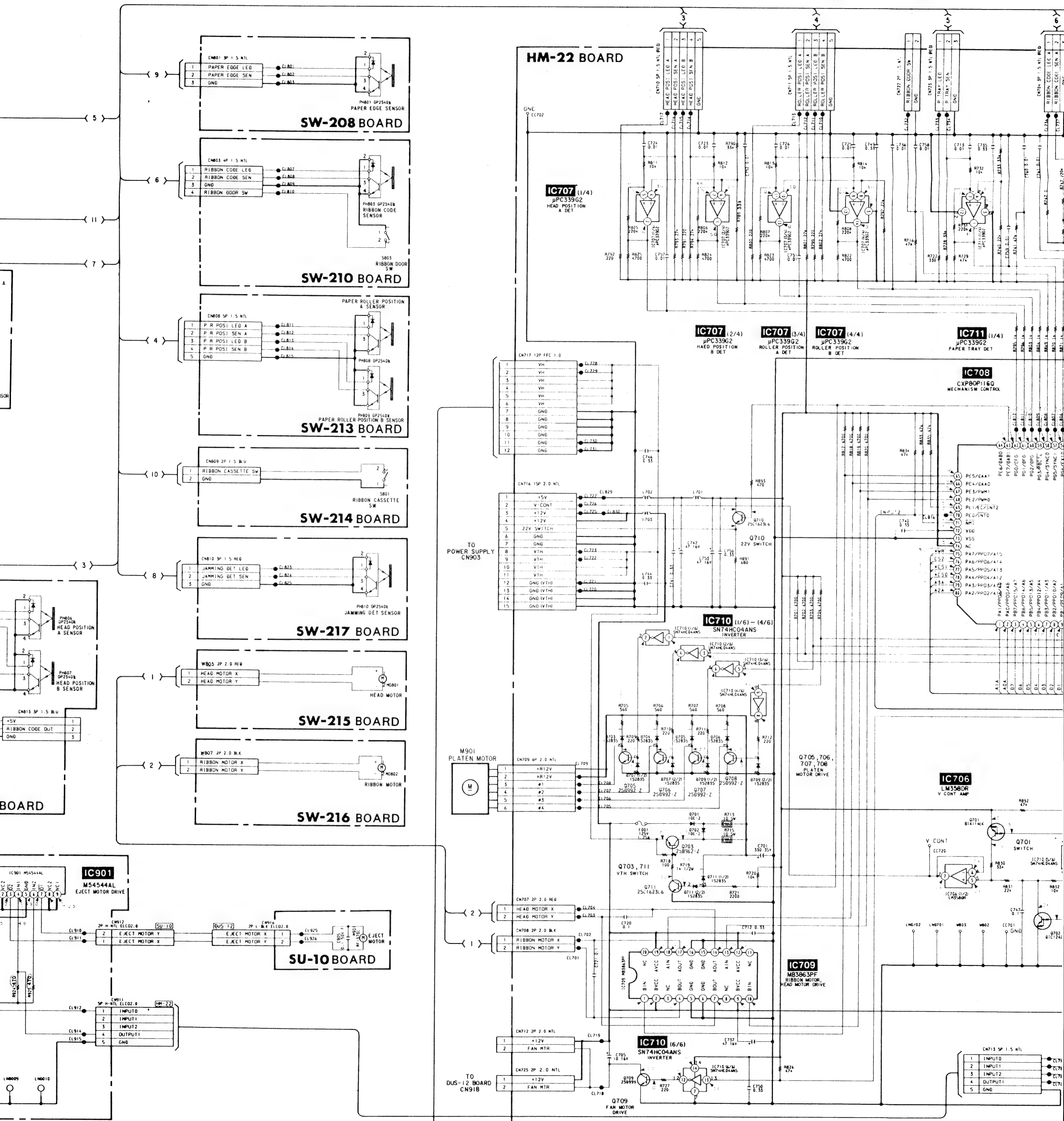




(PAPER OUT SENSOR) SW-42 (PAPER CHECK SENSOR) SW-208 (PAPER EDGE SENSOR) SW-210 (RIBBON CODE SENSOR) SW-2  
 SW-216 (RIBBON MOTOR) SW-217 (JAMMING DET SENSOR)



PER EJECT MOTOR CONTROL) SU-10 (EJECT MOTOR) SW-39 (PAPER TRAY SENSOR) SW-41 (PAPER OUT SENSOR) SW-42 (PAPER CHECK SE  
ER ROLLER POSITION SENSOR) SW-214 (RIBBON CASSETTE SWITCH) SW-215 (HEAD MOTOR) SW-216 (RIBBON MOTOR) SW-217 (JAMMING DET  
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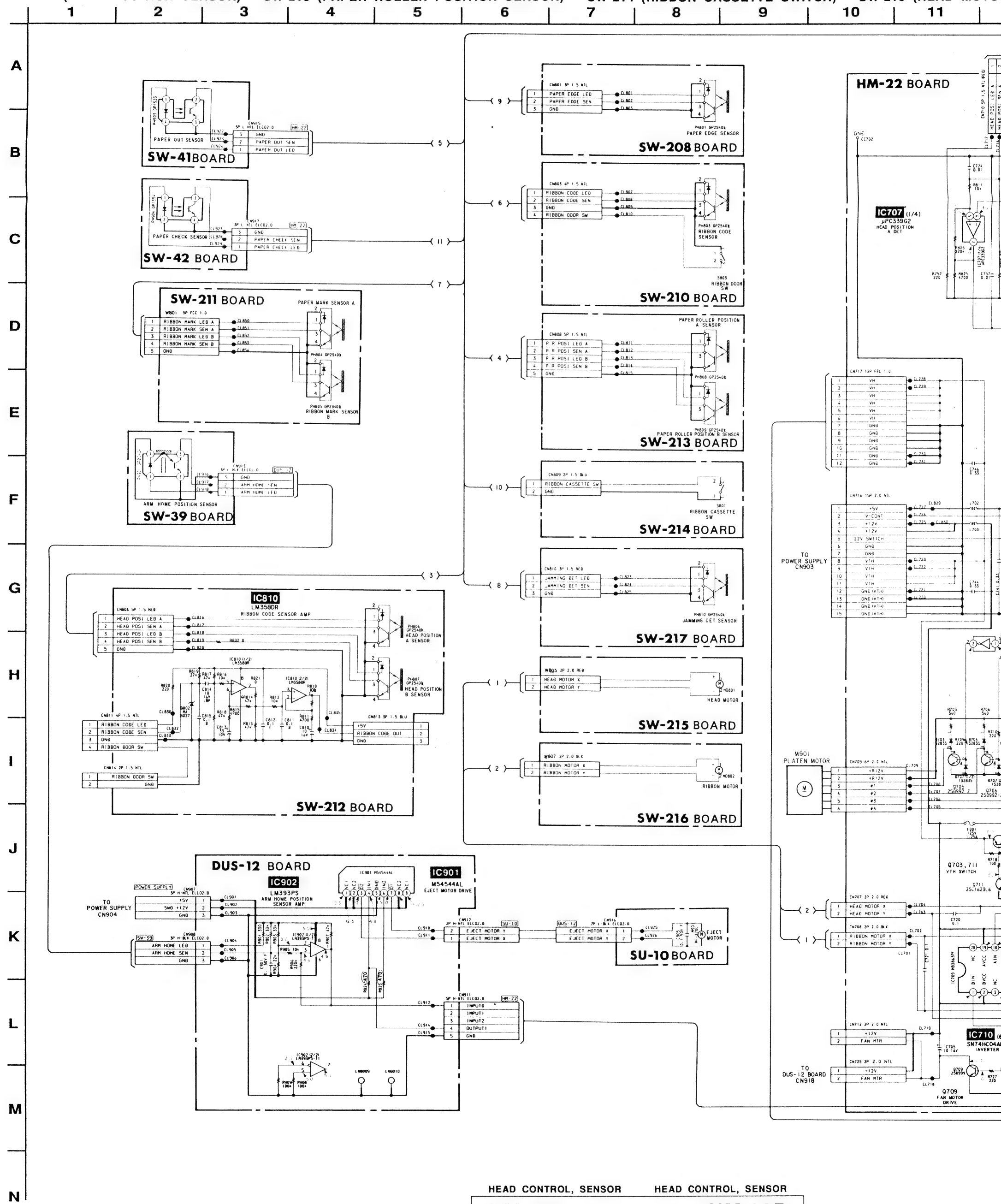
HEAD CONTROL, SENSOR

HEAD CONTROL, SENSOR

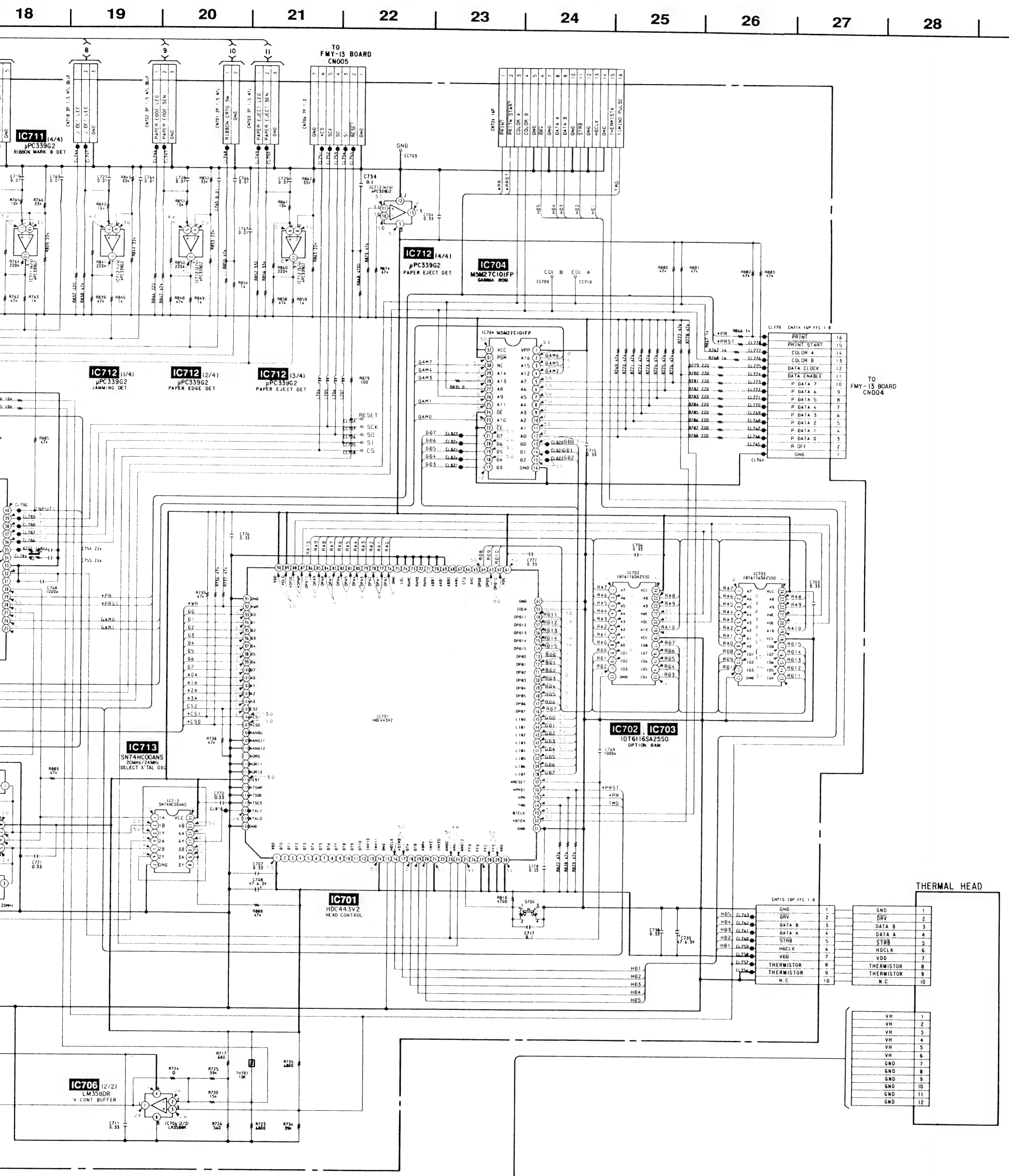
HM-22P

HM-22P

HM-22P (THERMAL HEAD CONTROL) DUS-12 (PAPER EJECT MOTOR CONTROL) SU-10 (EJECT MOTOR) SW-39 (PAPER TRAY SENSOR) SW-212 (HEAD POSITION SENSOR) SW-213 (PAPER ROLLER POSITION SENSOR) SW-214 (RIBBON CASSETTE SWITCH) SW-215 (HEAD MOTOR)



PER EDGE SENSOR) SW-210 (RIBBON CODE SENSOR) SW-211 (RIBBON MARK SENSOR)



HEAD CONTROL, SENSOR HEAD CONTROL, SENSOR

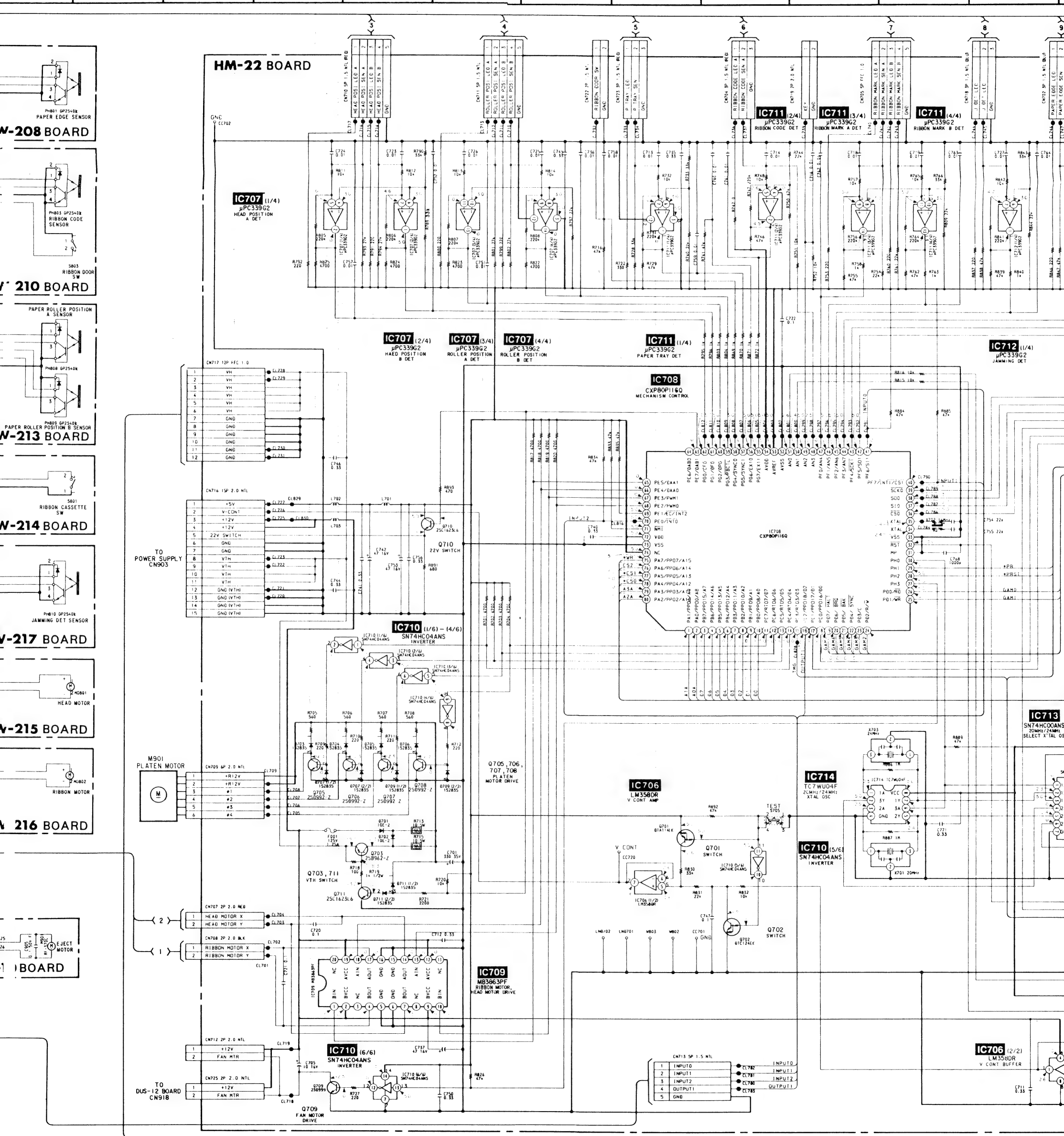
HM-22P

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CT MOTOR) SW-39 (PAPER TRAY SENSOR) SW-41 (PAPER OUT SENSOR) SW-42 (PAPER CHECK SENSOR) SW-208 (PAPER EDGE SENSOR)  
 RIBBON CASSETTE SWITCH) SW-215 (HEAD MOTOR) SW-216 (RIBBON MOTOR) SW-217 (JAMMING DET SENSOR)

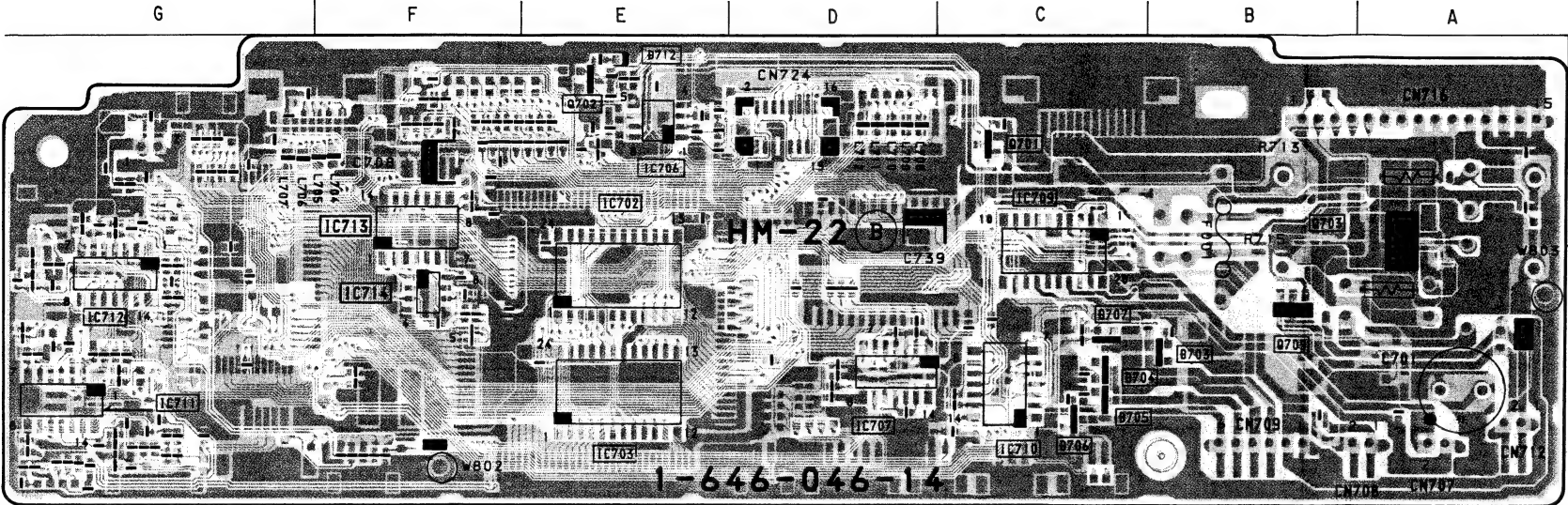
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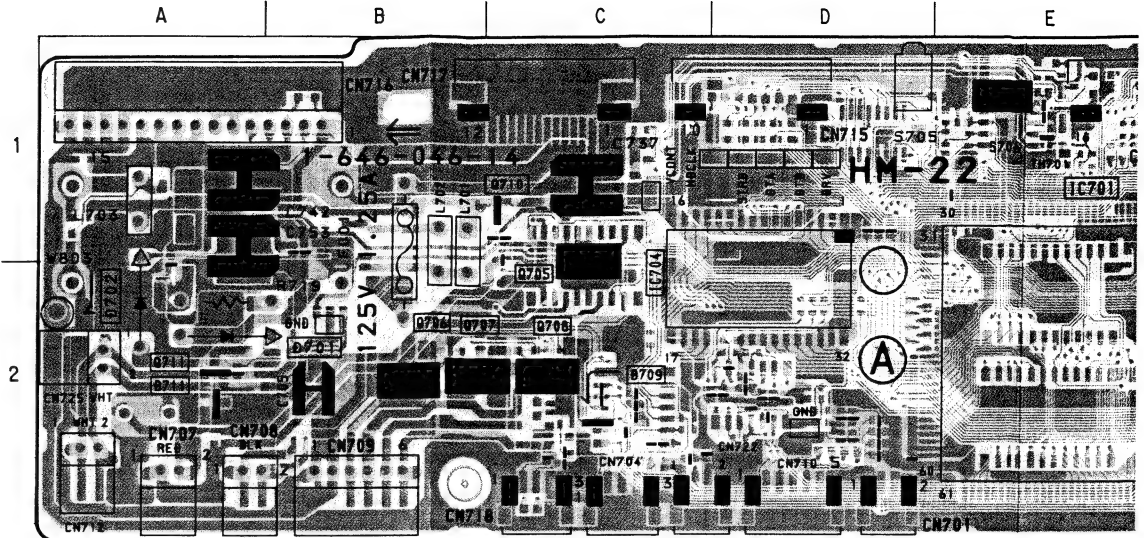
HEAD CONTROL, SENSOR

HM-22P

HM-22P (THERMAL HEAD CONTROL) DUS-12 (PAPER EJECT MOTOR CONTROL) SU-10 (EJECT MOTOR) SW-39 (PAPER TRAY SENSOR) SW-41 (PAPER OUT SENSOR) SW-42 (PAPER CHECK SENS) SW-212 (HEAD POSITION SENSOR) SW-213 (PAPER ROLLER POSITION SENSOR) SW-214 (RIBBON CASSETTE SWITCH) SW-215 (HEAD MOTOR) SW-216 (RIBBON MOTOR) SW-217 (JAMMING DET



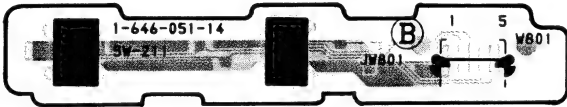
HM-22 -SOLDERING SIDE-  
1-646-046-14



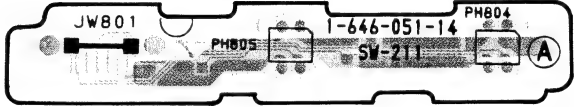
HM-22P BOARD

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CN704	C-2	IC709	C-2	S
CN705	G-2	IC710	D-2	S
CN706	G-1	IC711	G-2	S
CN707	A-2	IC712	G-2	S
CN708	A-2	IC713	F-1	S
CN709	B-2	IC714	F-2	S
CN710	D-2			
CN711	G-2	L701	B-1	S
CN712	A-2	L702	B-1	S
CN713	G-2	L703	A-1	S
CN714	F-1	L704	F-1	S
CN715	D-1	L705	F-1	S
CN716	A-1	L706	G-1	S
CN717	C-1	L707	G-1	S
CN718	C-2	L708	D-1	S
CN719		L709	D-1	S
CN721	G-1	L710	D-1	S
CN722	C-2	L711	D-1	S
CN723	G-2	L712	D-1	S
CN724	D-1			
CN725	A-2	Q701	C-1	S
		Q702	E-1	S
D701	A-2	Q703	B-1	S
D702	A-2	Q705	C-2	S
D703	B-2	Q706	B-2	S
D704	C-2	Q707	B-2	S
D705	C-2	Q708	C-2	S
D706	C-2	Q709	B-2	S
D707	C-2	Q710	C-1	S
D709	C-2	Q711	A-2	S
D711	A-2			
D712	E-1	S705	D-1	S
		S706	E-1	S
F001	B-1	TH701	E-1	S
IC701	E-2			
IC702	E-2	X701	F-2	S
IC703	E-2	X702	F-2	S
IC704	D-2	X703	F-2	S

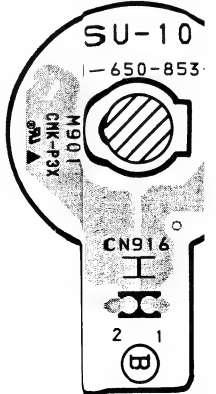
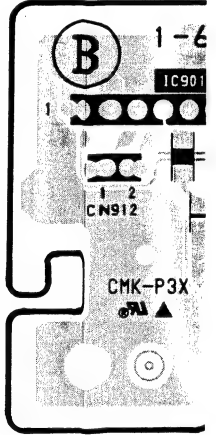
S:SOLDERING SIDE



SW-211 -SOLDERING SIDE-  
1-646-051-14



SW-211 -COMPONENT SIDE-  
1-646-051-14

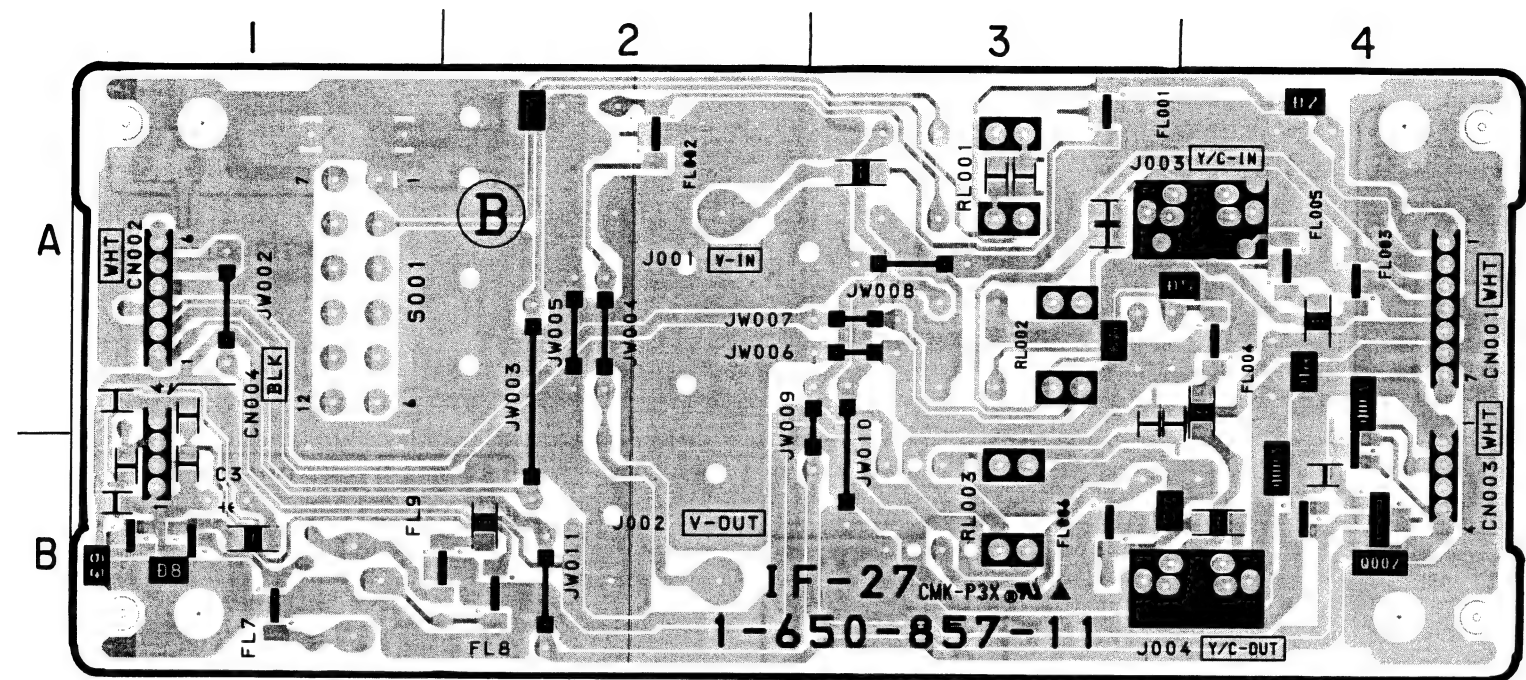


SU-10 -SOLDERING SIDE-  
1-650-853-1 2



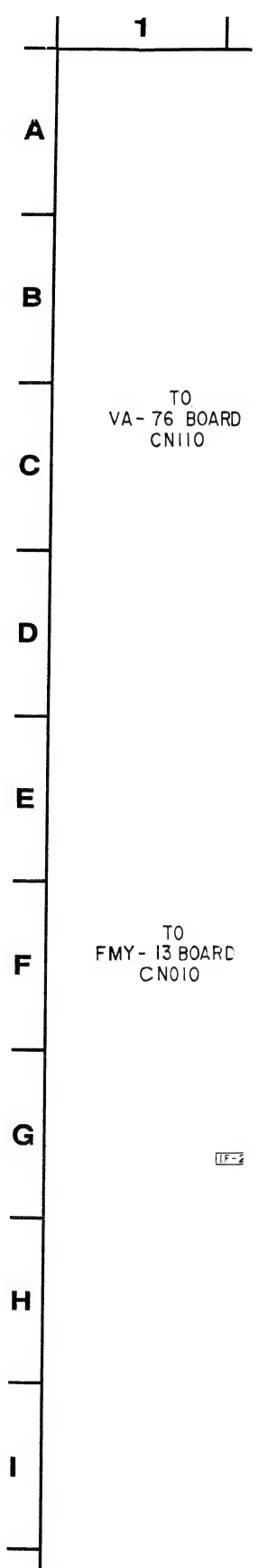


IF-27 (IN/OUT TERMINAL)

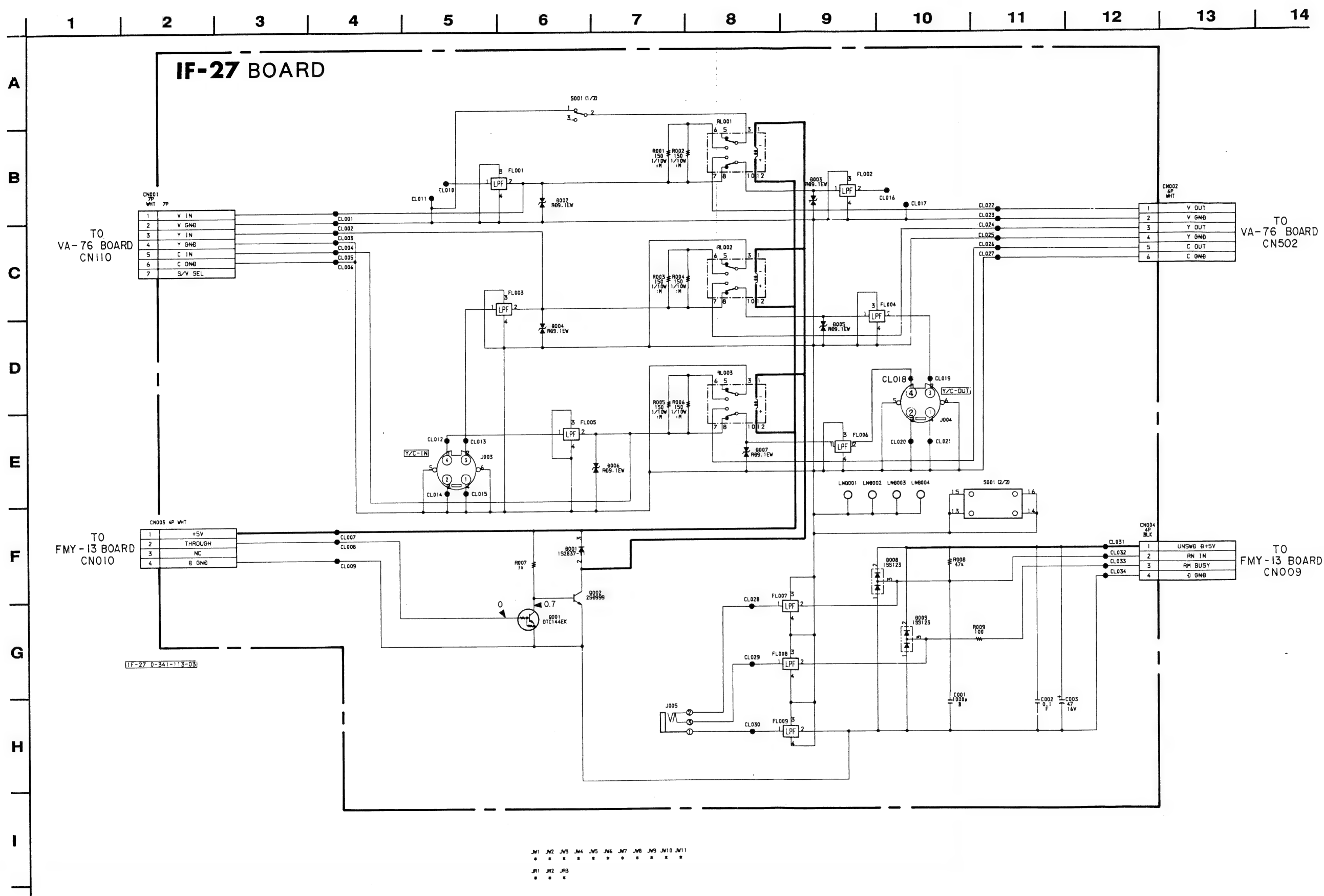


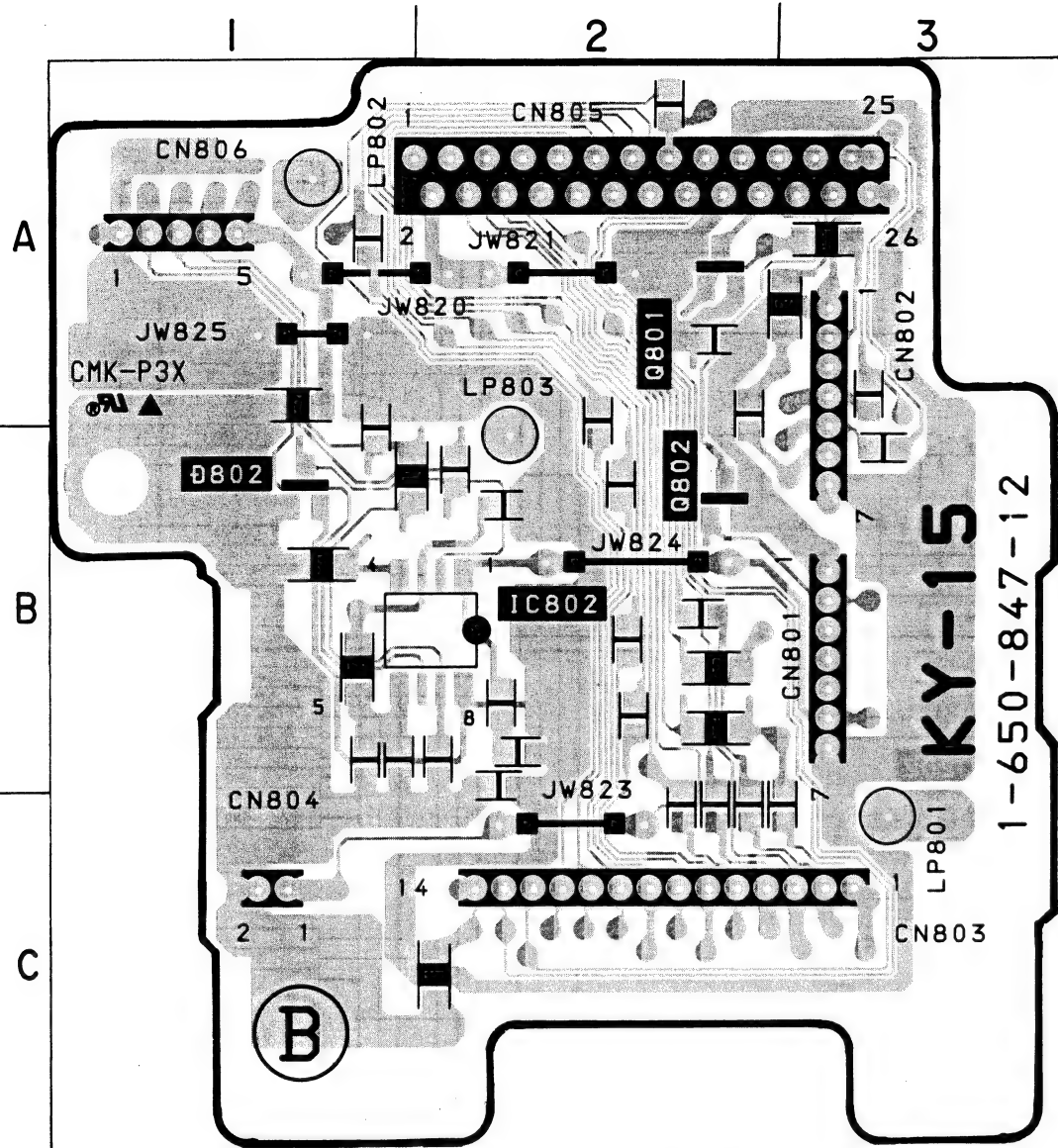
IF-27 -SOLDERING SIDE-  
1-650-857-12

IF-27 (IN/OUT T

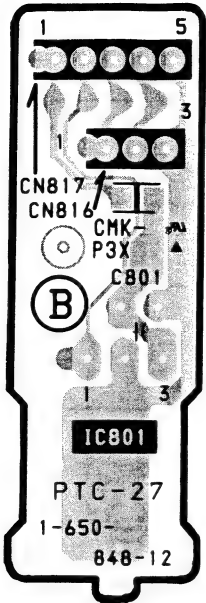


IF-27 (IN/OUT TERMINAL)

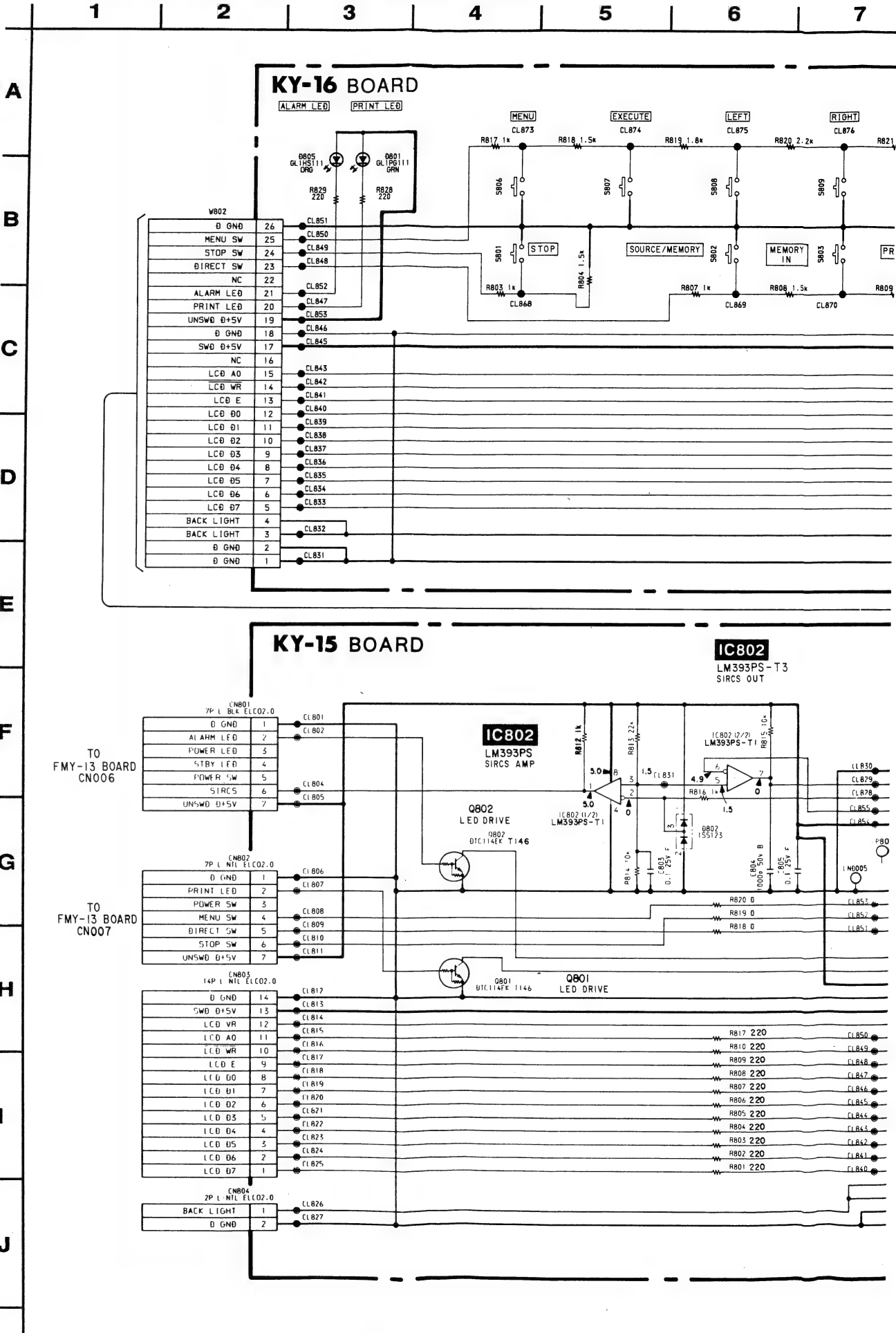




KY-15 -SOLDERING SIDE-  
1-650-847-12

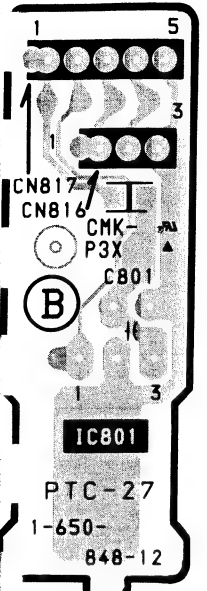


PTC-27 -SOLDERING SIDE-  
1-650-848-12

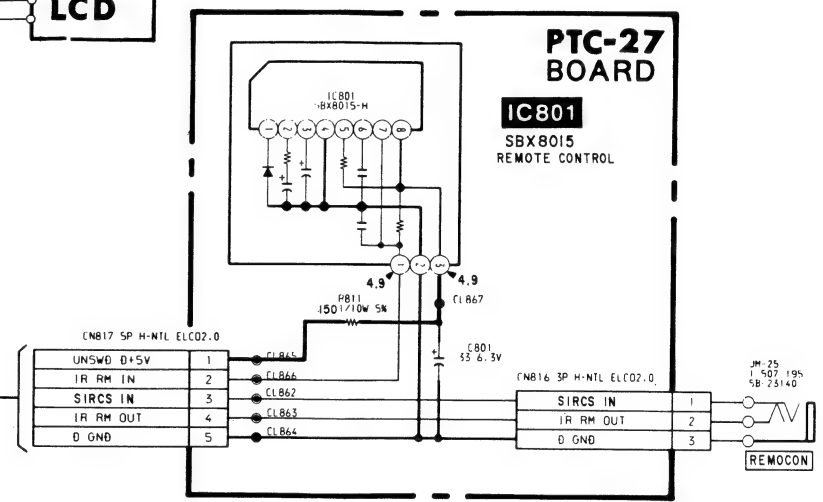
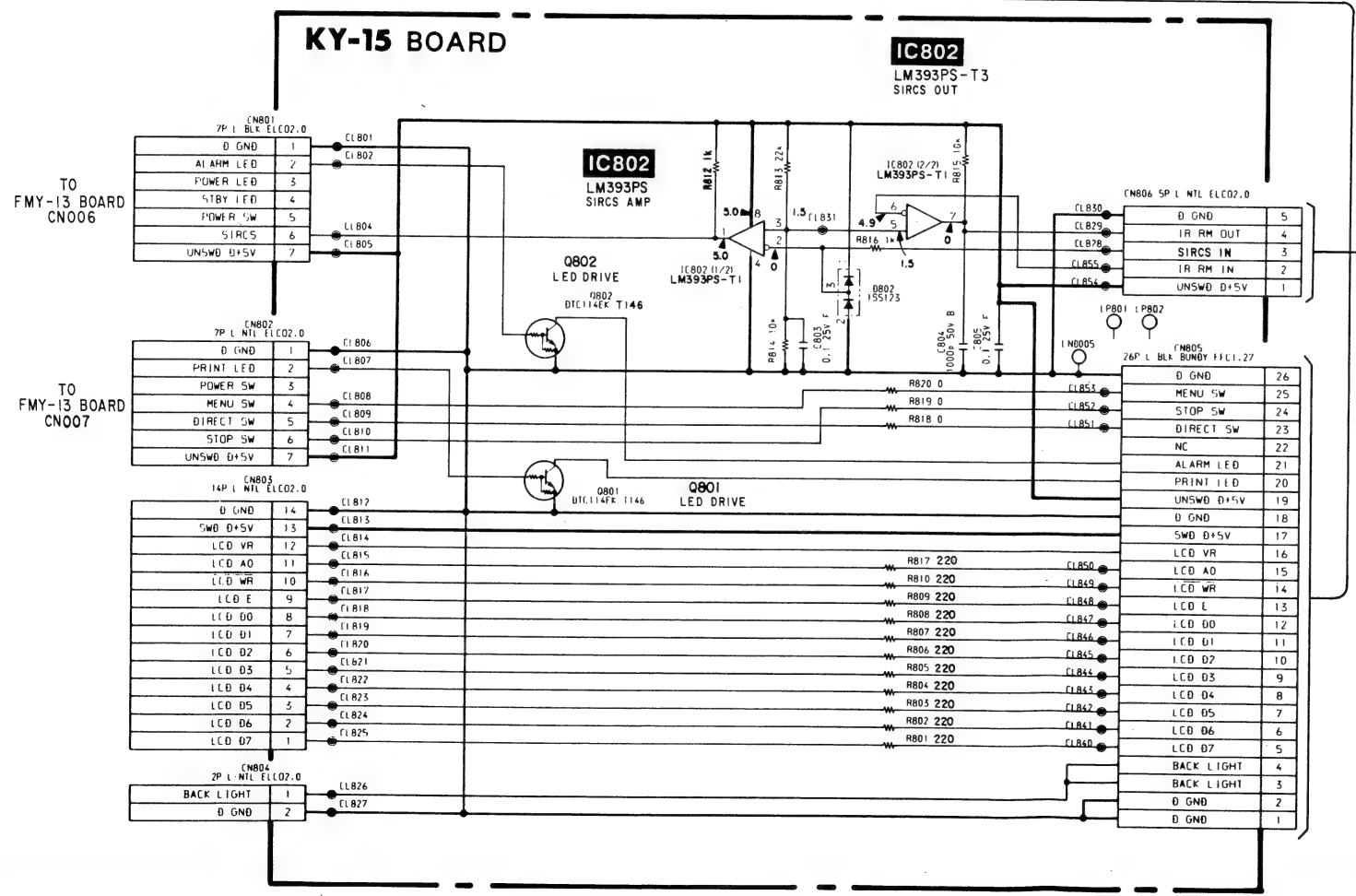
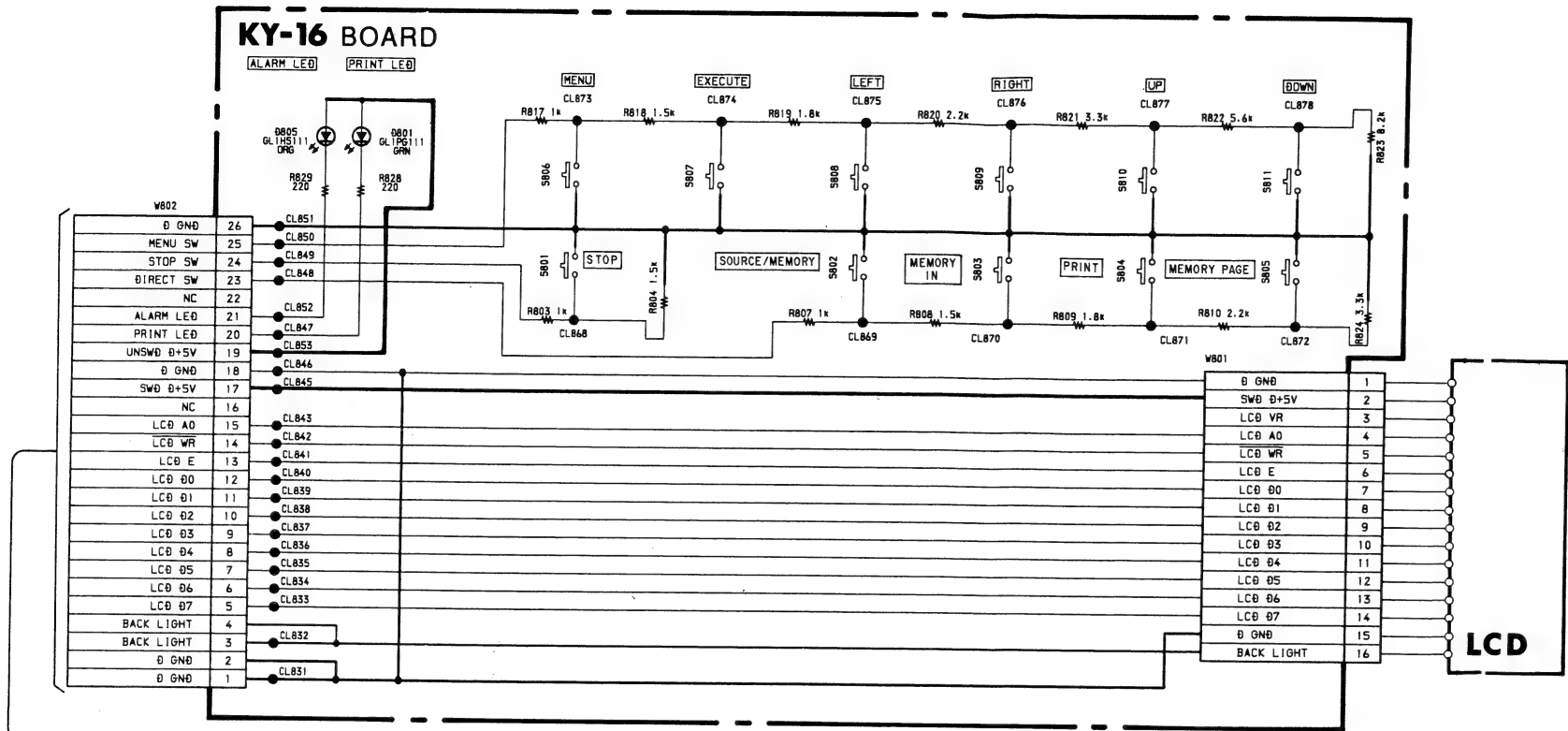


1 2 3 4 5 6 7 8 9 10 11 12 13 14

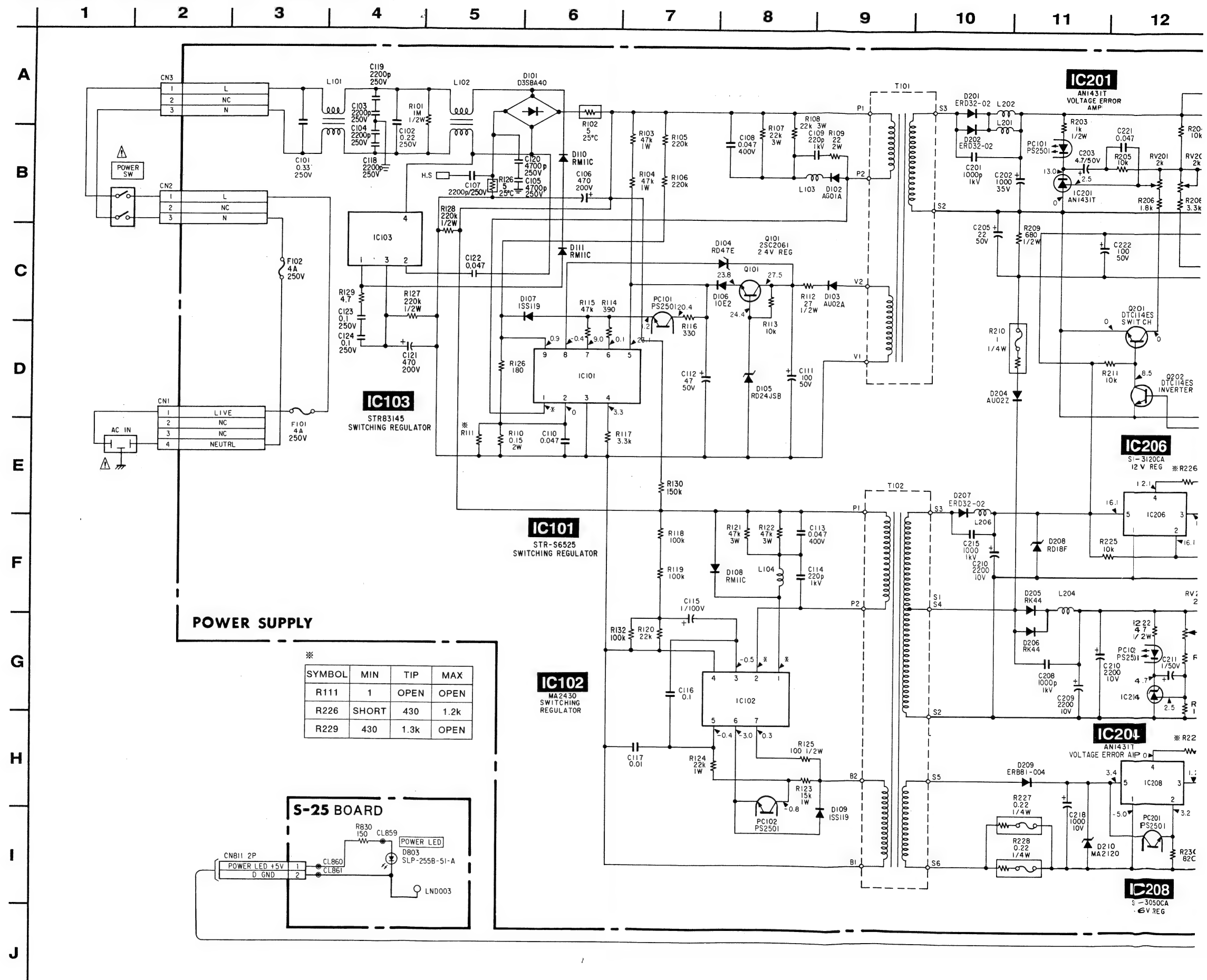
A  
B  
C  
D  
E  
F  
G  
H  
I  
J



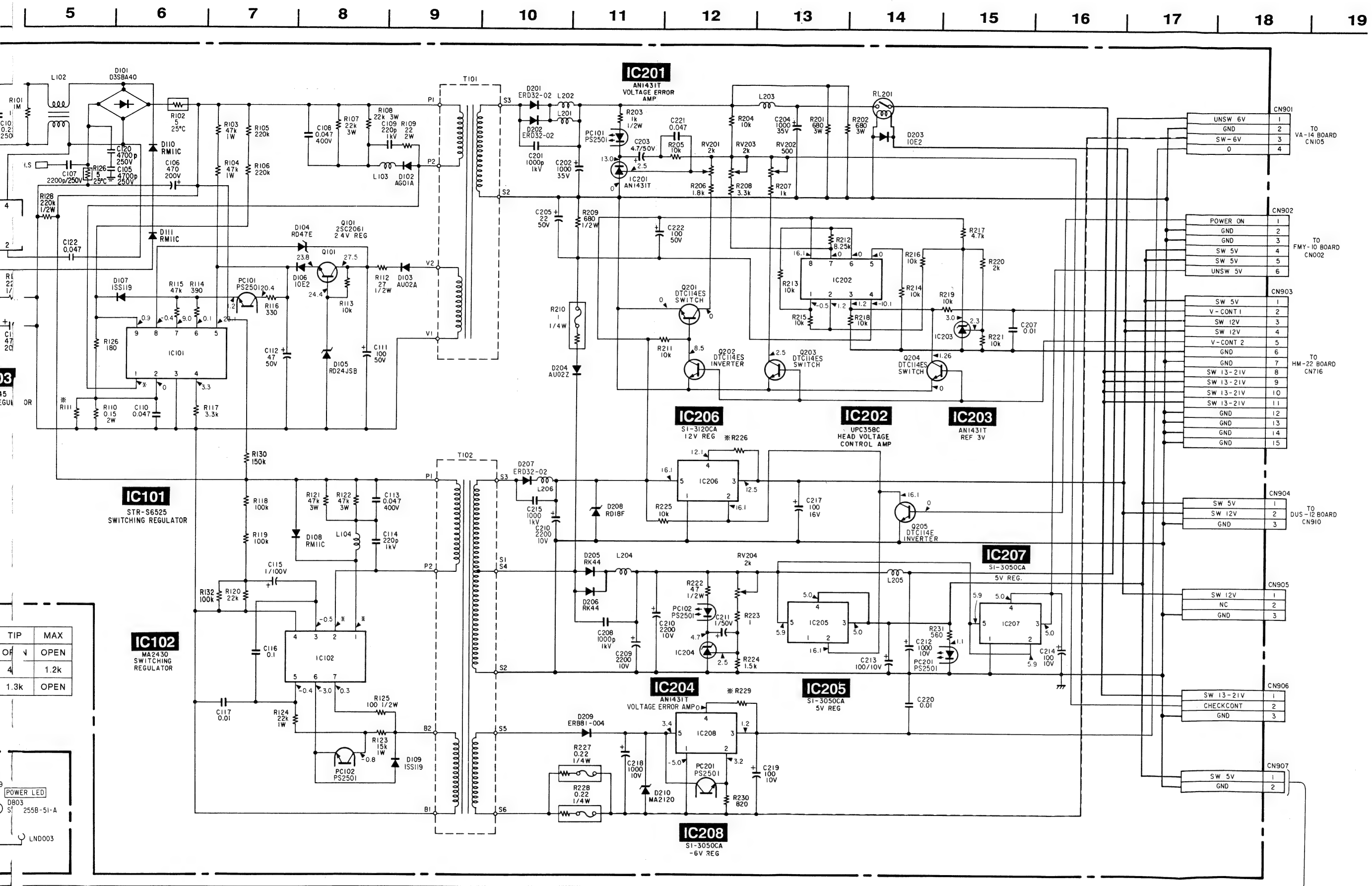
PTC-27 - SOLDERING SIDE - 50-18-12



SWITCHING REGULATOR S-25 (POWER SUPPLY)

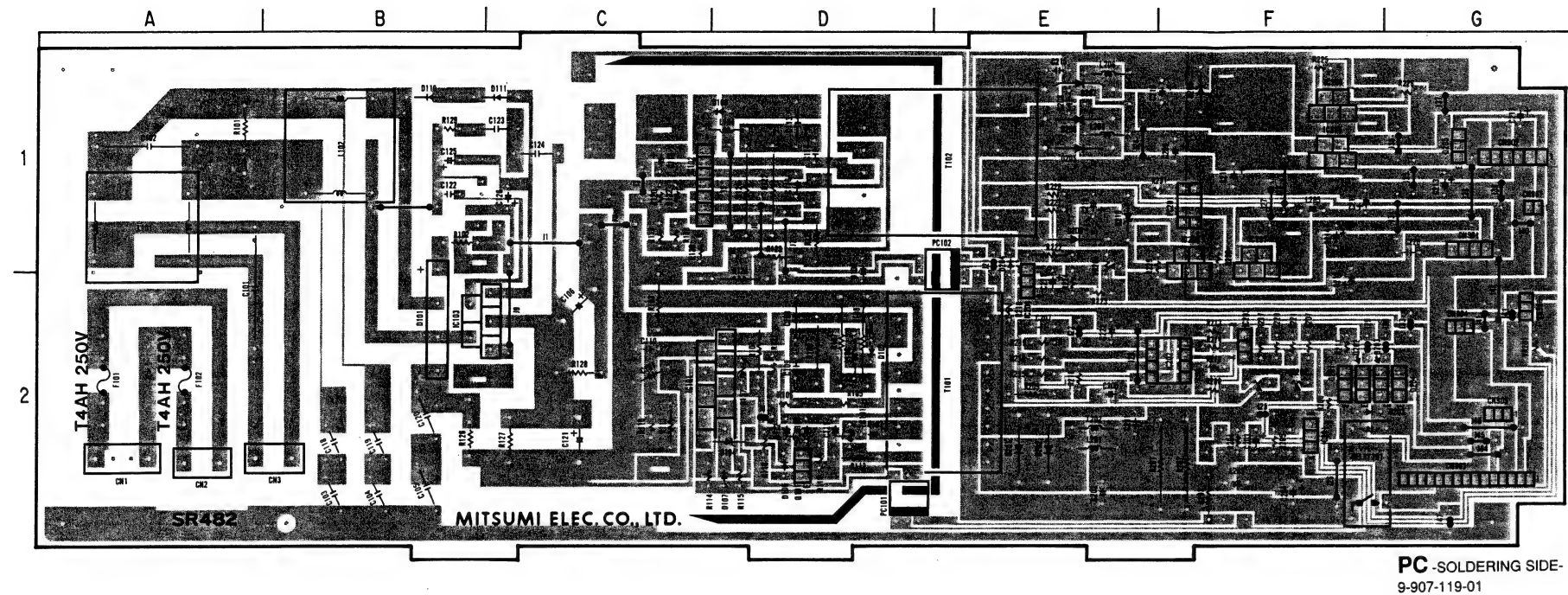






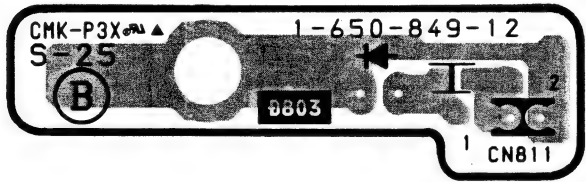


SWITCHING REGULATOR S-25 (POWER SUPPLY)



SWITCHING REGULATOR

CN1	A-2	L101	A-1
CN2	A-2	L102	B-1
CN3	B-2	L103	D-1
CN901	G-1	L104	D-1
CN902	G-1	L201	E-2
CN903	G-2	L202	E-2
CN904	G-2	L203	F-1
CN905	G-2	L204	E-1
CN906	G-2	L205	F-1
CN907	G-1	L206	E-1
D101	B-2	PC101	D-2
D102	D-2	PC102	E-1
D103	D-2	PC201	F-1
D104	D-2		
D105	D-2	Q101	D-2
D106	D-2	Q202	F-2
D107	D-2	Q202	F-2
D108	D-1	Q203	F-2
D109	D-1	Q204	G-2
D201	E-2	Q205	G-1
D202	E-2		
D203	F-2	RL201	F-2
D204	E-1		
D205	E-1	T101	E-2
D206	E-1	T102	E-1
D207	E-1		
D208	F-1	RV201	G-2
D209	E-1	RV202	F-1
D210	E-1	RV203	F-1
		RV204	E-1
F101			
IC101	C-2		
IC102	C-1		
IC201	F-2		
IC202	F-2		
IC203	F-2		
IC204	E-2		
IC205	F-1		
IC206	F-1		
IC207	F-1		
IC208	F-1		

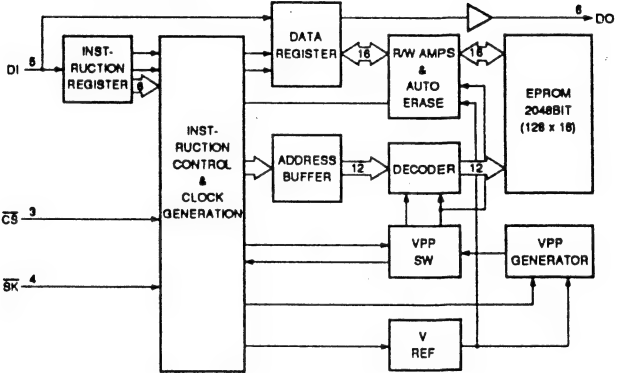
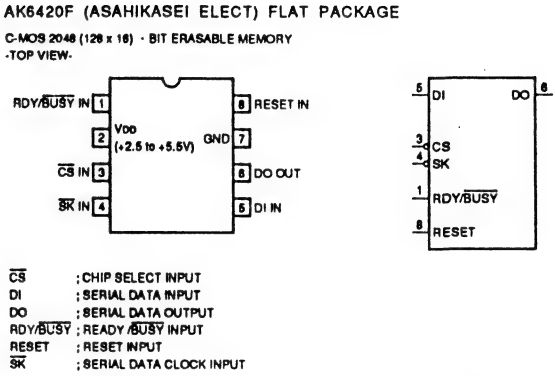
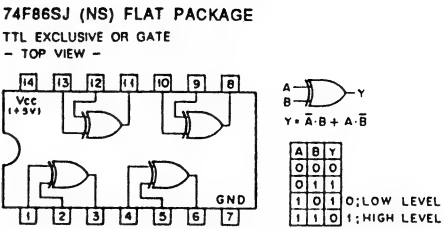
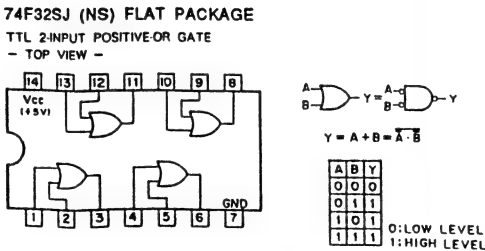
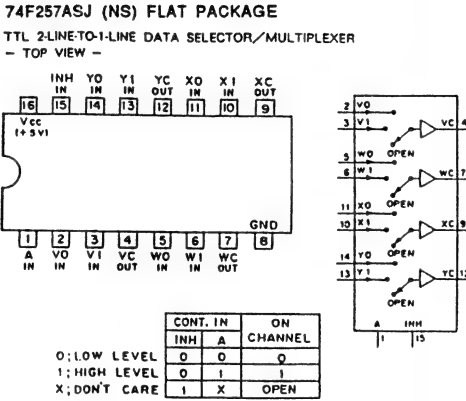
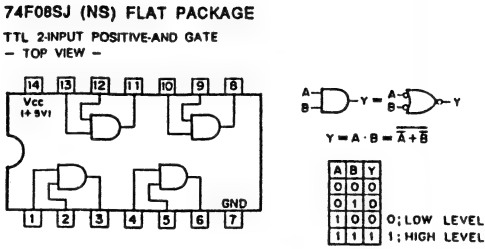
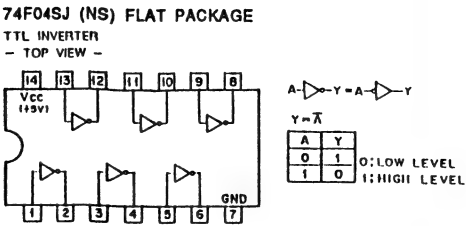


S-25-SOLDERING SIDE-

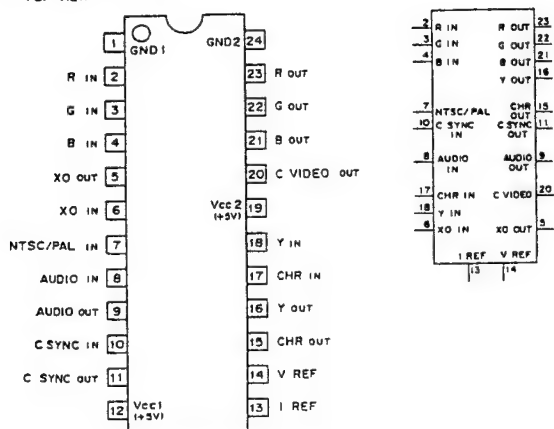
4-3. SEMICONDUCTORS

The chart in this section may sometimes show diodes, transistors, and ICs that are not interchangeable. When replacing a component, be sure to refer to the parts list. The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

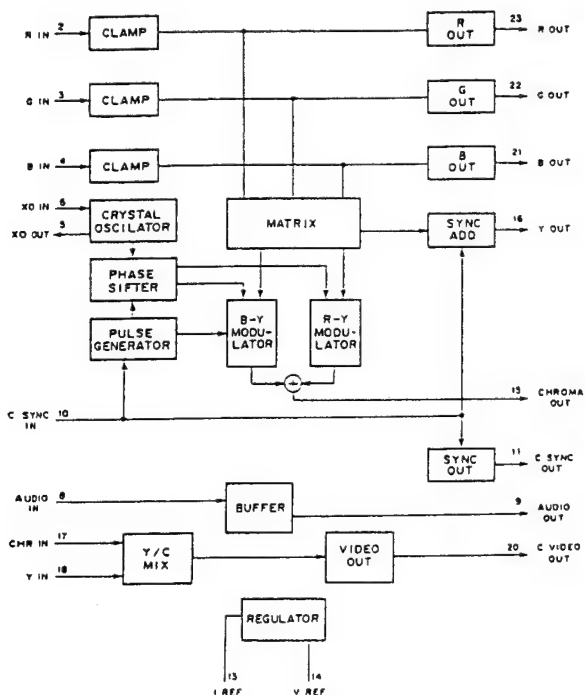
TYPE	PAGE	TYPE	PAGE	TYPE	PAGE
02CZ2.0 .....	146	74F08SJ .....	130	MC74HC4053F .....	141
1S2835 .....	146	74F257ASJ .....	130	MC74HC574AF .....	141
1S2836 .....	146	74F32SJ .....	130	NJM2230M .....	142
1S2837 .....	146	74F86SJ .....	130	NJM2233BM .....	142
1SS226 .....	146	AK6420F .....	130	NJM2234M .....	143
1SS300 .....	146	CXA1145M .....	131	NJM2460M .....	143
1SS302 .....	146	CXA1211M .....	131	NJM4560M .....	143
1T33C-01 .....	146	CXA1521M .....	131	PQ05SZ1U .....	143
10E-2 .....	146	CXA1585Q .....	131	PQ05TZ1U .....	143
2SA1618 .....	146	CXD1159Q .....	132	RC4558PS .....	143
2SB962 .....	146	CXD1176Q .....	133	S-8054ALB-LM-S .....	143
2SC1623 .....	146	CXD1178Q .....	133	SN74HC00ANS .....	143
2SC4207 .....	146	CXD1217Q .....	134	SN74HC04ANS .....	143
2SD992 .....	146	CXD2024Q .....	135	SN74LS221NS .....	143
2SD999-CLCK .....	146	CXD8391Q .....	136	TC4W53F .....	144
DTA114EK .....	146	CXD8444Q .....	136	TC7W00F .....	144
DTC114EK .....	146	CXL5505M .....	136	TC7W02F .....	144
DTC124EK .....	146	CXP80P116Q-1 .....	137	TC7WU04F .....	144
DTC144EK .....	146	CXP80P116Q-1-UP1800E .....	137	TL082CPS .....	144
GP1S23 .....	146	DS1000S-50 .....	137	TL431CM .....	144
GP1S54 .....	146	DS1000S-75 .....	137	UPC319G2 .....	144
GP2S40K .....	146	HDC443V2 .....	137	UPC393G2 .....	145
MA152WK .....	146	HD6475368F-FMY13-01 .....	138	UPD65006GF-250-3B8 .....	145
MA728 .....	146	HM514400AS7GS-EL .....	139	UPD65013GF-407-3BA .....	145
MA8027-L .....	146	IDT6116SA25S0 .....	139		
MSA1586 .....	146	LM358D .....	139		
MSC4116 .....	146	LM324D .....	139		
RD9.1EW .....	146	M54544AL .....	140		
RN1302-TE85L .....	146	M5M27C101FP-UP12G-E2 .....	140		
SBX8015-H .....	146	M5M27C101FP-UP12M-E2 .....	140		
SLP-255B .....	147	M5M27C101FP-UP12S-E2 .....	140		
XN2401 .....	147	M62352GP .....	140		
XN4501 .....	147	MB3863PF-G-BND .....	141		
XN4601 .....	147	MB621948 .....	141		
74F04SJ .....	130	MB89093PFV-G-125-BND .....	142		



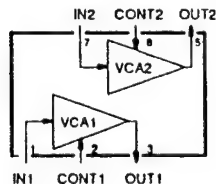
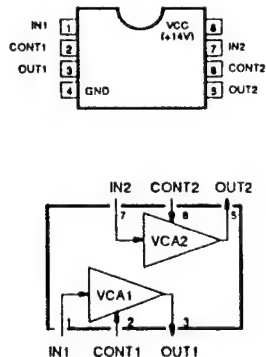
CXA1145M (SONY) FLAT PACKAGE  
RGB COMPOSITE ENCODER  
- TOP VIEW -



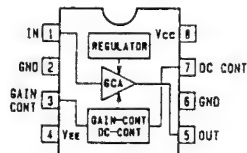
AUDIO : AUDIO INPUT/OUTPUT  
B : BLUE OUTPUT  
CHR : CHROMA SIGNAL INPUT/OUTPUT  
C SYNC : CHROMA SYNC INPUT/OUTPUT  
C VIDEO : CHROMA VIDEO OUTPUT  
G : GREEN OUTPUT  
I REF : REFERENCE CURRENT  
NTSC/PAL : NTSC/PAL SELECT INPUT  
R : RED OUTPUT  
V REF : REFERENCE VOLTAGE  
XO : CRYSTAL OSCILLATOR INPUT/OUTPUT  
Y : Y-SIGNAL INPUT/OUTPUT



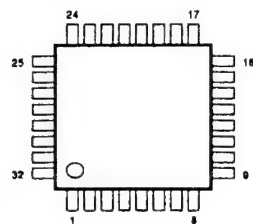
CXA1211M (SONY)  
ELECTRONIC VOLUME  
- TOP VIEW -



CXA1521M (SONY)  
GAIN CONTROL AMP  
- TOP VIEW -

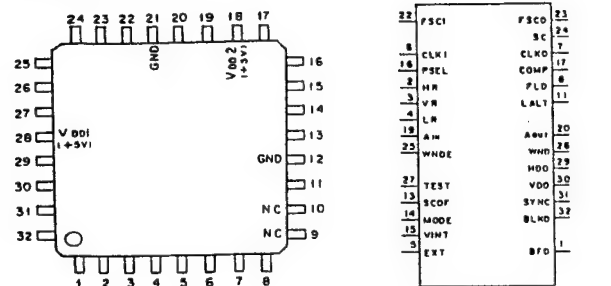


CXA1585Q (SONY)  
C-MOS R.G.B DECODER  
- TOP VIEW -

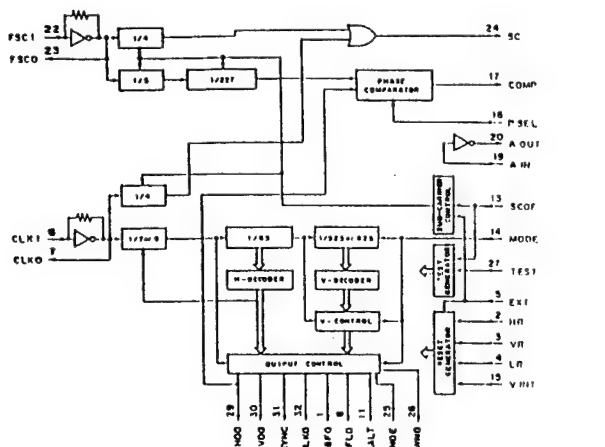


# CXD1159Q (SONY)

C-MOS SYNC GENERATOR  
- TOP VIEW -

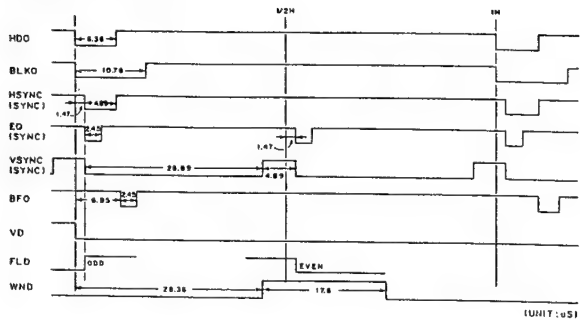


PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	O	BFO	9	-	NC	17	O	COMP	25	I	WNDE
2	I	HR	10	-	NC	18	-	VDD2(+5V)	26	O	WND
3	I	VR	11	O	LALT	19	I	AIN	27	I	TEST
4	I	LR	12	-	GND	20	O	AOUT	28	-	VDD1(+5V)
5	I	EXT	13	I	MODE	21	-	GND	29	O	HDO
6	I	CLK1	14	I	MODE	22	I	FSC1	30	O	VDO
7	O	CLK0	15	I	VINT	23	O	FSC0	31	O	SYNC
8	O	FLD	16	I	PSEL	24	O	SC	32	O	BLND

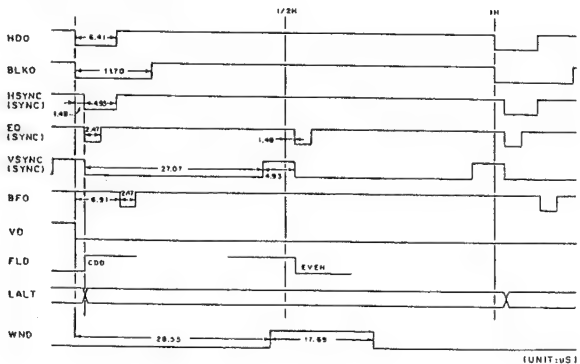


<b>INPUT</b> AIN : FILTER INVERTER INPUT CLK1 : CLOCK INPUT (NTSC: 14.31818MHz / PAL: 14.1875MHz) EXT : INT/EXT (L: INT) FSC1 : AFSC CLOCK INPUT HR : H RESET LR : LALT RESET MODE : NTSC/PAL (L: NTSC) PSEL : POLARITY SELECT FOR PHASE COMP SCOF : SUBCARRIER OFF (L: OFF) TEST : TEST INPUT VINT : INITIALIZE VR : V RESET WNDE : WINDOW ENABLE	<b>OUTPUT</b> AOUT : FILTER INVERTER OUTPUT BFO : BURST FLAG PULSE BLKO : COMPOSITE BLANKING PULSE CLK0 : CLOCK OUTPUT COMP : PHASE COMP FLD : FIELD PULSE FSC0 : AFSC CLOCK OUTPUT HDO : H DRIVE PULSE LALT : LINE ALTERNATE PULSE SC : SUBCARRIER SYNC : COMPOSITE SYNC PULSE VDO : V DRIVE PULSE WND : WINDOW
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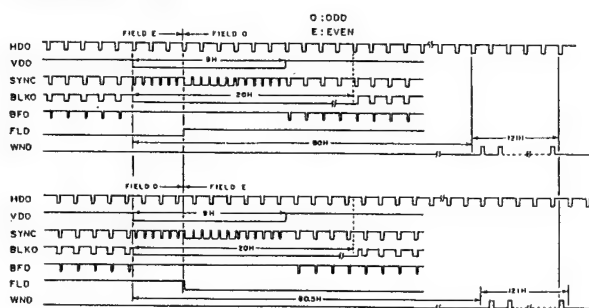
TIMING CHART H (NTSC)



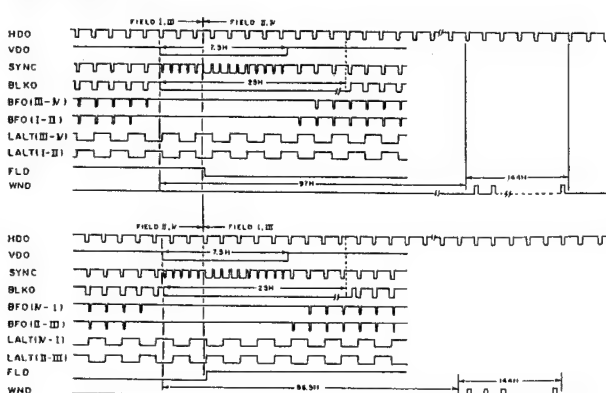
TIMING CHART H (PAL)



TIMING CHART V (NTSC)

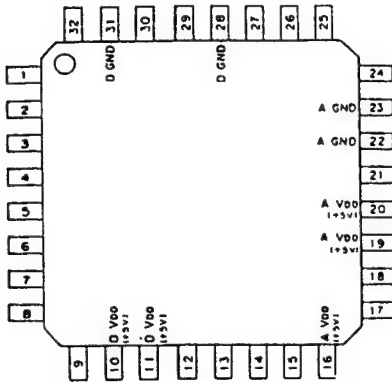


TIMING CHART V (PAL)

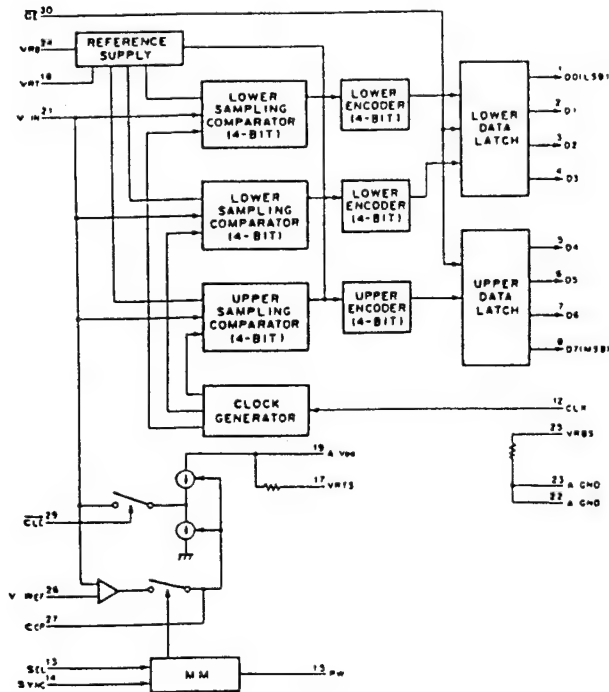


# CXD1176Q (SONY)

CMOS 8-BIT 20MSPS VIDEO A/D CONVERTER WITH CLAMP FUNCTION  
- TOP VIEW -

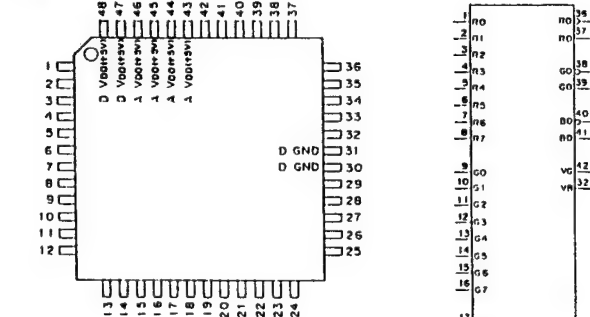


No.	I/O	SIGNAL	No.	I/O	SIGNAL	No.	I/O	SIGNAL	No.	I/O	SIGNAL
1	O	DO(LSB)	9	-	R.C.	17	O	VRS	25	O	VRS
2	O	B1	10	-	B YDD	18	O	VET	26	I	VREF
3	O	B2	11	-	B YDD	19	-	A YDD	27	I/O	CCP
4	O	B3	12	I	CLK	20	-	A YDD	28	-	B CHD
5	O	B4	13	I	SEL	21	I	V IN	29	I	CLE
6	O	B5	14	I	SYNC	22	-	A CHD	30	O	DE
7	O	B6	15	I/O	PN	23	-	A GND	31	-	B CHD
8	O	B7(MSB)	16	-	A YDD	24	O	VRS	32	-	R.C.

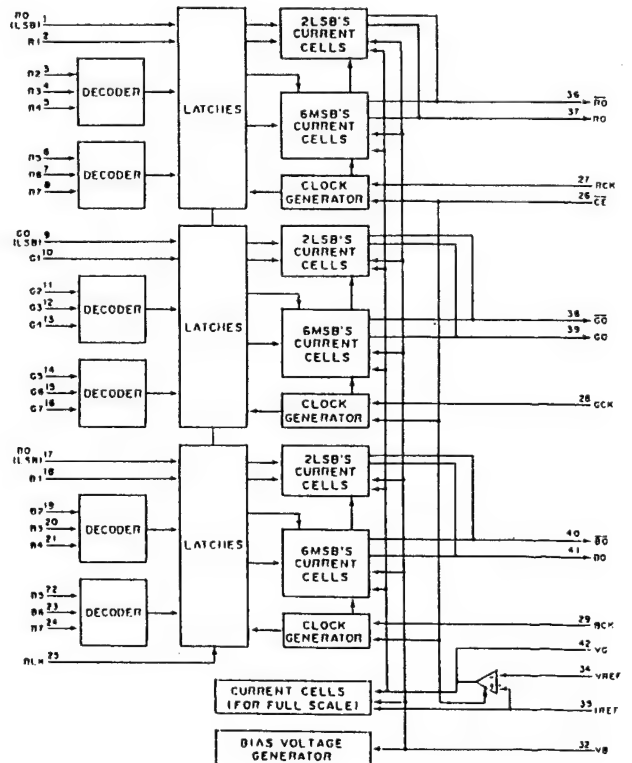


# CXD1178Q (SONY) FLAT PACKAGE

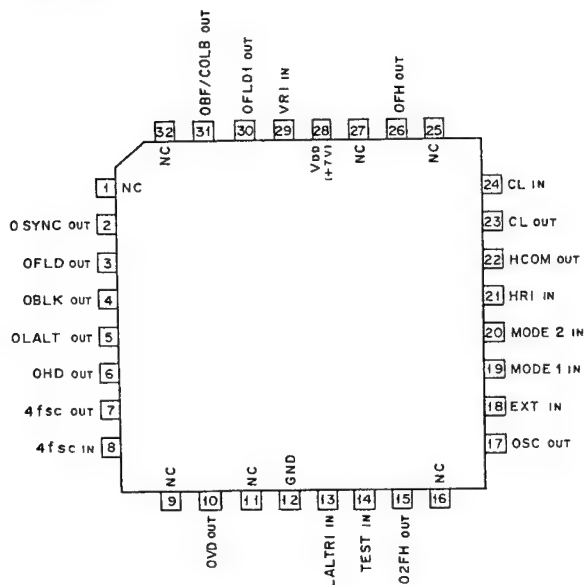
CMOS 3CH 8-BIT 40MHz D/A CONVERTER  
- TOP VIEW -



No.	I/O	SIGNAL	No.	I/O	SIGNAL	No.	I/O	SIGNAL	No.	I/O	SIGNAL
1	I	NO(LSB)	13	I	G4	25	I	BLK	37	O	RO
2	I	R1	14	I	G5	26	I	CE	38	O	GO
3	I	R2	15	I	G6	27	I	CLK	39	O	GO
4	I	R3	16	I	G7	28	I	GCK	40	O	BO
5	I	R4	17	I	BO(LSB)	29	I	BCK	41	O	BO
6	I	R5	18	I	B1	30	-	O GND	42	I	VG
7	I	R6	19	I	B2	31	-	O GND	43	-	A VDD
8	I	R7	20	I	B3	32	I	VB	44	-	A VDD
9	I	GO(LSB)	21	I	B4	33	-	A GND	45	-	A VDD
10	I	G1	22	I	B5	34	I	VREF	46	-	A VDD
11	I	G2	23	I	D6	35	I	IREF	47	-	A VDD
12	I	G3	24	I	B7	36	O	RO	48	-	A VDD



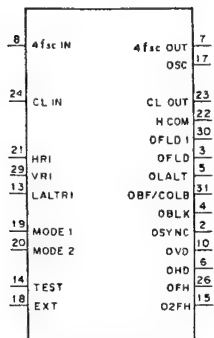
CXD1217Q (SONY) FLAT PACKAGE  
C-MOS SYNC GENERATOR  
- TOP VIEW -



SYSTEM	4fsc	CLOCK
NTSC	910fm	910fm
PAL	1135fm + 2fv	908fm
PALM	909fm	910fm
SECAM	—	908fm

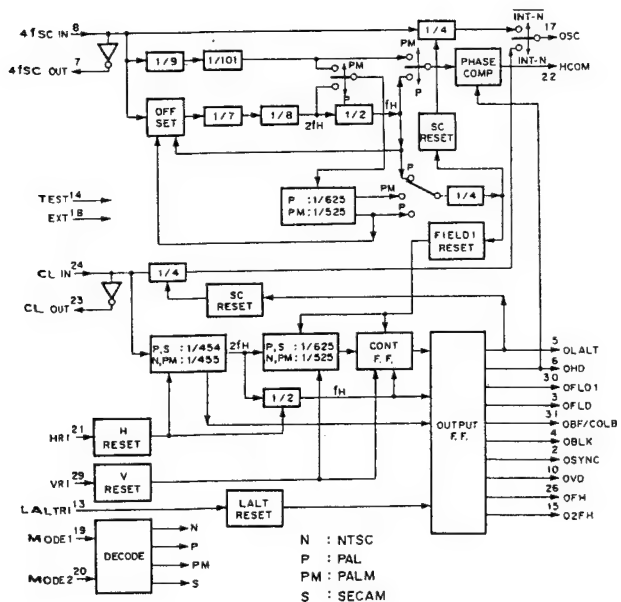
INPUT		SYSTEM
MODE1	MODE2	
0	0	NTSC
0	1	SECAM
1	0	PALM
1	1	PAL

0 : LOW LEVEL  
1 : HIGH LEVEL

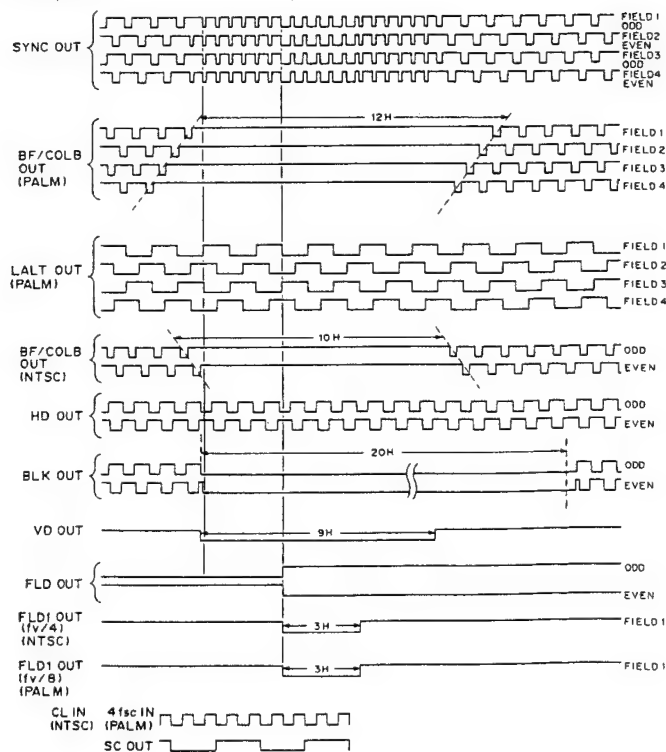


INPUT  
4fsc IN : 4fsc  
CL IN : CLOCK  
EXT : SYNC MODE SELECT  
(L : INTERNAL/H : EXTERNAL)  
HRI : HORIZONTAL RESET  
LALTRI : LINE ALTERNATE RESET  
MODE1,2 : SYSTEM SELECT  
VRI : VERTICAL RESET

OUTPUT  
4fsc OUT : 4fsc  
CL OUT : CLOCK  
HCOM : PHASE COMPARTOR  
O2FH : 2fh  
OBF/COLB : BURST FLAG/COLOR BLANKING  
OBLK : COMPOSITE BLANKING  
OFH : fh  
OFLD : FIELD PULSE  
OFLD1 : FIELD1  
OHD : HORIZONTAL DRIVE  
OLALT : LINE ALTERNATE  
OSC : SUBCARRIER  
OSYNC : COMPOSITE SYNC  
OVD : VERTICAL DRIVE

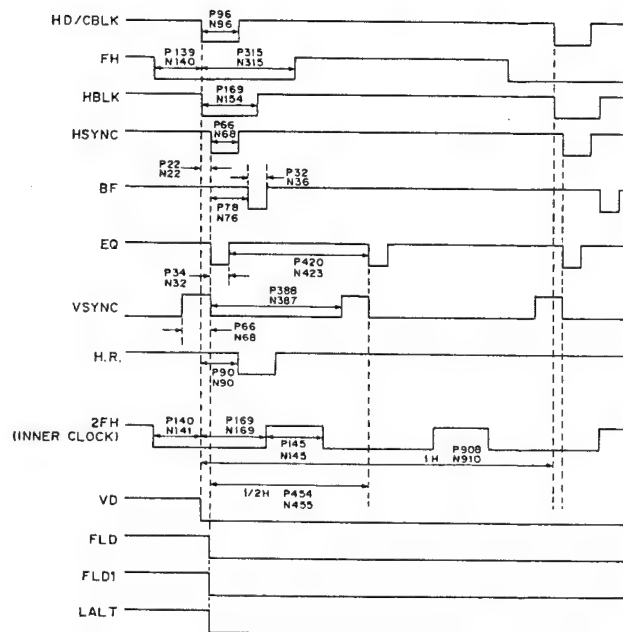
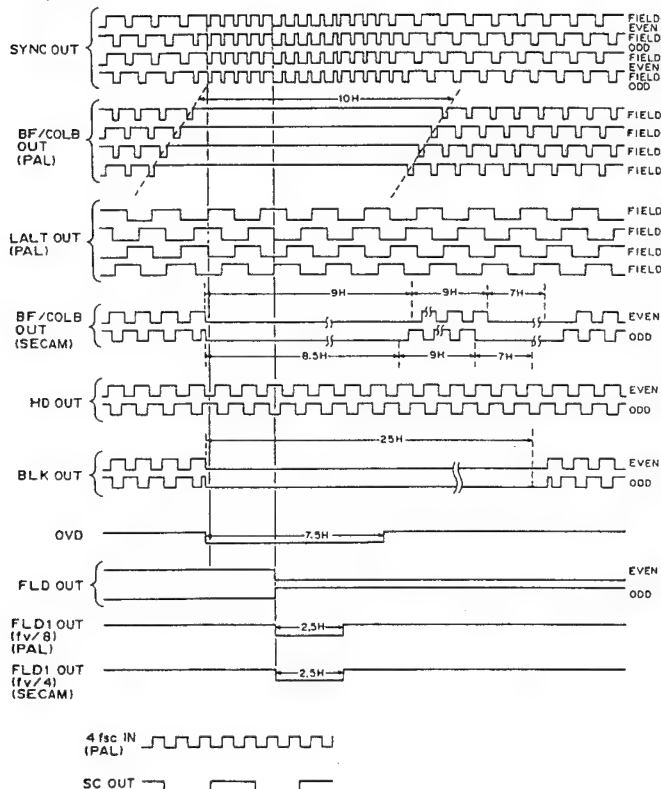


(INTSC, PALM)





(PAL, SECAM)

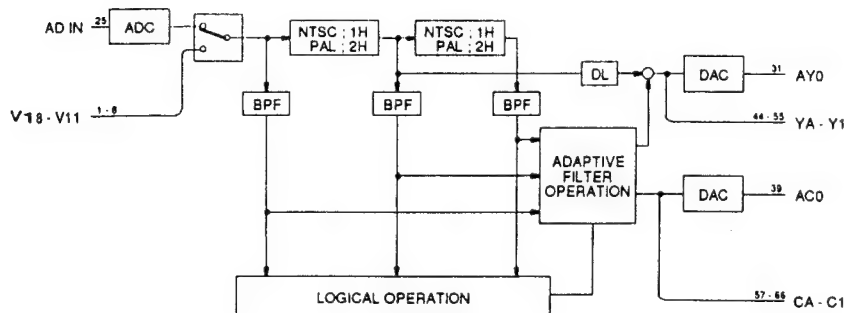
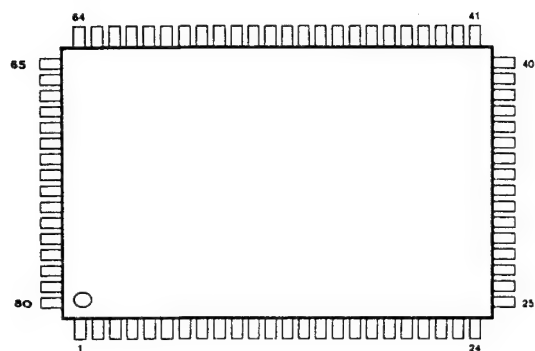


P: PAL, SECAM  
N: NTSC, PALM

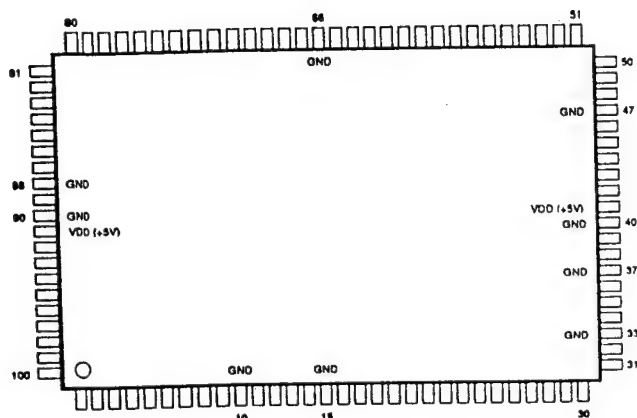
CXD0204Q (SONY)

C-MOS DIGITAL COMB FILTER (NTSC/PAL)

— TOP VIEW —

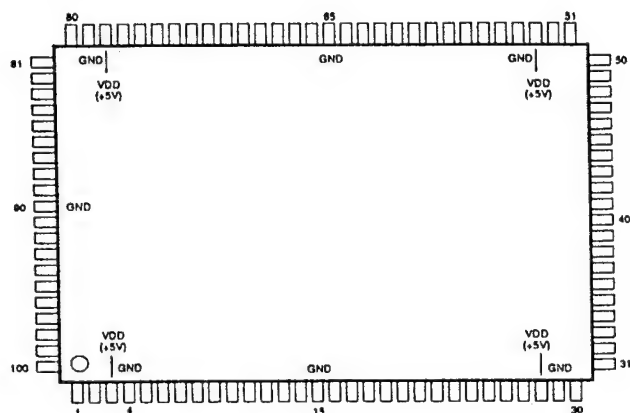


CXD8391Q (SONY)  
C-MOS GATE ARRAY  
— TOP VIEW —



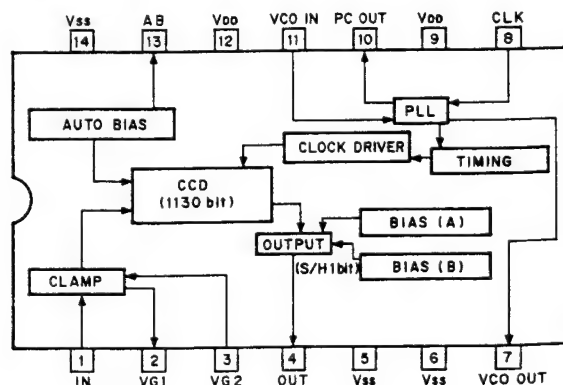
PIN No.	SIGNAL	PIN No.	SIGNAL	PIN No.	SIGNAL	PIN No.	SIGNAL
1	P47	26	P21	51	A20	76	D07
2	P48	27	P20	52	A19	77	D08
3	P45	28	P17	53	CS0	78	D05
4	P44	29	P18	54	CS1	79	D04
5	P43	30	P15	55	CS2	80	D03
6	P42	31	P14	56	A18	81	D02
7	P41	32	P13	57	A17	82	D01
8	P40	33	GND	58	A18	83	D00
9	WRP	34	RAS	59	A15	84	RES
10	GND	35	RC	60	A14	85	WR
11	P37	36	CAS	61	A13	86	DRQ1
12	P36	37	GND	62	A12	87	DRQ2
13	P35	38	DBRQ	63	A11	88	GND
14	P34	39	ABRQ	64	A10	89	CK
15	GND	40	GND	65	A09	90	GND
16	P33	41	VDD (+5V)	66	GND	91	VDD (+5V)
17	P32	42	PWR	67	A08	92	WRC
18	P31	43	BPWR	68	A07	93	P57
19	P30	44	P12	69	A06	94	P56
20	P27	45	P11	70	A05	95	P55
21	P26	46	P10	71	A04	96	P54
22	P25	47	GND	72	A03	97	P53
23	P24	48	A23	73	A02	98	P52
24	P23	49	A22	74	A01	99	P51
25	P22	50	A21	75	A00	100	P50

CXD8444Q (SONY)  
C-MOS GATE ARRAY  
— TOP VIEW —

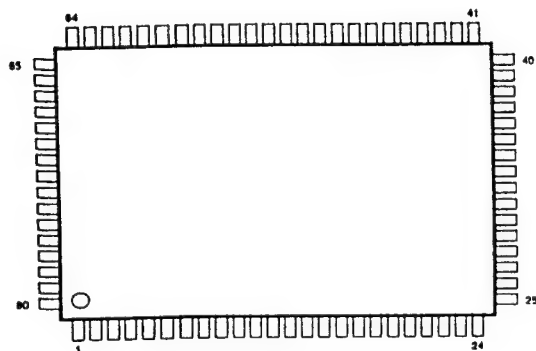


PIN No.	IO	SIGNAL	PIN No.	IO	SIGNAL	PIN No.	IO	SIGNAL	PIN No.	IO	SIGNAL
1	I	TRIM	26	O	RO2	51	O	BO2	76	I	ADON
2	I	CAPEN	27	O	RO3	52	O	BO3	77	O	ADOE
3	-	VDD (+5V)	28	-	VDD (+5V)	53	-	VDD (+5V)	78	-	VDD (+5V)
4	-	VSS	29	-	VSS	54	-	VSS	79	-	VSS
5	IO	DBUS7	30	O	RO4	55	O	BO4	80	I	CLR
6	IO	DBUS6	31	O	RO5	56	O	BO5	81	-	N.C
7	IO	DBUS5	32	O	RO6	57	O	BO6	82	IO	GBUS6
8	IO	DBUS4	33	O	RO7	58	O	BO7	83	IO	GBUS7
9	IO	DBUS3	34	I	Y3A	59	IO	BBUS0	84	IO	RBUS0
10	IO	DBUS2	35	I	Y3B	60	IO	BBUS1	85	IO	RBUS1
11	IO	DBUS1	36	O	GO0	61	IO	BBUS2	86	I	BXW
12	IO	DBUS0	37	O	GO1	62	IO	BBUS3	87	I	CLKA
13	O	XWRPD	38	O	GO2	63	O	ACK	88	I	OE1
14	O	WRPD	39	O	GO3	64	O	SO	89	I	CLK
15	-	VSS	40	-	VSS	65	-	VSS	90	-	VSS
16	O	BLK	41	O	GO4	66	IO	BBUS4	91	O	STDCLK
17	I	STD	42	O	GO5	67	IO	BBUS5	92	I	OE2
18	I	CLKSEL	43	O	GO6	68	IO	BBUS6	93	I	CLKB
19	I	DAON	44	O	GO7	69	IO	BBUS7	94	I	OE3
20	I	WRP	45	I	SCK	70	IO	GBUS0	95	IO	RBUS2
21	I	COLA	46	I	VD	71	IO	GBUS1	96	IO	RBUS3
22	I	COLB	47	I	SI	72	IO	GBUS2	97	IO	RBUS4
23	I	POFF	48	I	CS	73	IO	GBUS3	98	IO	RBUS5
24	O	RO0	49	O	BO0	74	IO	GBUS4	99	IO	RBUS6
25	O	RO1	50	O	BO1	75	IO	GBUS5	100	IO	RBUS7

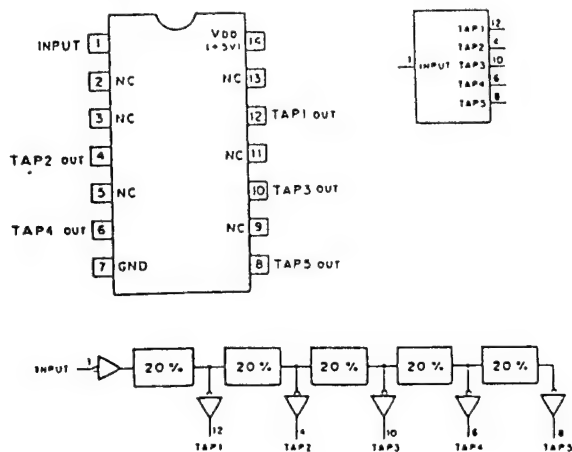
CXL5505M (SONY)  
CMOS-CCD 1H DELAY LINE  
— TOP VIEW —



CXP80P116Q-1  
CXP80P116Q-1-UP1800E  
C-MOS 8-BIT MICRO PROCESSING UNIT  
- TOP VIEW -

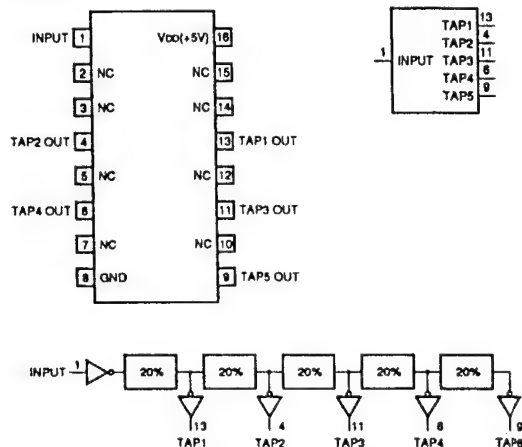


DS1000S-50 (DALLAS SEMICONDUCTOR)(DELAY TIME=50 nS)  
C-MOS DELAY LINE  
- TOP VIEW -



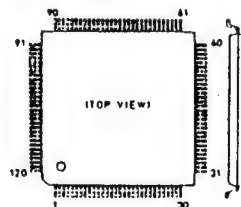
TYPE. NO.	DELAY TIME (nS)				
	TAP1	TAP2	TAP3	TAP4	TAP5
DS1000-50	10	20	30	40	50
DS1000-60	12	24	36	48	60
DS1000-75	15	30	45	60	75
DS1000-100	20	40	60	80	100
DS1000-125	25	50	75	100	125
DS1000-150	30	60	90	120	150
DS1000-175	35	70	105	140	175
DS1000-200	40	80	120	160	200
DS1000-250	50	100	150	200	250
DS1000-500	100	200	300	400	500

DS1000S-75 (DALLAS SEMICONDUCTOR)(DELAY TIME=75 nS)  
C-MOS DELAY LINE  
- TOP VIEW -



DELAY TIME (nS)				
TAP1	TAP2	TAP3	TAP4	TAP5
15	30	45	60	75

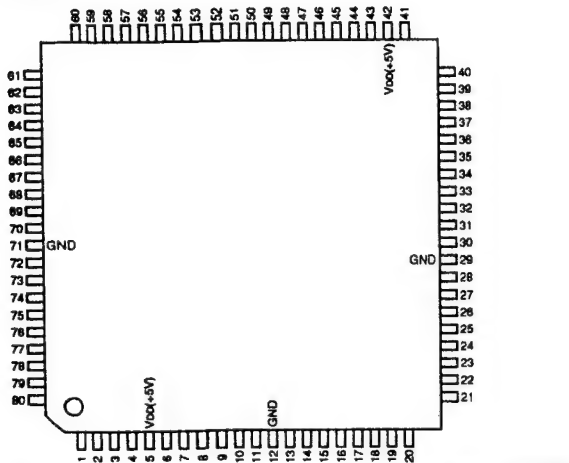
HDC443V2 (HITACHI)  
- TOP VIEW -



No.	I/O	Name	No.	I/O	Name	No.	I/O	Name	No.	I/O	Name
1	-	VDD	31	-	GND	61	-	VDD	91	-	GND
2	O	DTT0	32	O	DTE	62	I/O	DAA	92	I	WR
3	O	DTT1	33	I	CLK	63	I/O	DA9	93	I	DDD0
4	O	DTT2	34	I	TMGP	64	I/O	DA8	94	I	DDD1
5	O	DTT3	35	I	PRIN	65	O	CHOO	95	I	DDD2
6	O	DTT4	36	I	PRNS	66	O	AFOO	96	I	DDD3
7	O	DTT5	37	I	RESE	67	O	AAAB	97	I	DDD4
8	O	DTT6	38	I	LI7	68	O	ABBB	98	I	DDD5
9	O	DTT7	39	I	LI6	69	I	TSA	99	I	DDD6
10	O	DTT8	40	I	LI5	70	I	TSB	100	I	DDD7
11	O	DTT9	41	I	LI4	71	I	RWA	101	I	A0A
12	O	DTTA	42	I	LI3	72	I	RWB	102	I	A1A
13	I	TI07	43	I	LI2	73	I	RWC	103	I	A2A
14	O	TO04	44	I	LI1	74	I	LG	104	I	A3A
15	-	GND	45	I	LI0	75	-	GND	105	I	CS2
16	O	HDC	46	I/O	DA7	76	I/O	AD0	106	I	CS1
17	O	ST0B	47	I/O	DA6	77	I/O	AD1	107	I	CS0
18	O	DATA	48	I/O	DA5	78	I/O	AD2	108	O	TO02
19	O	DAT8	49	I/O	DA4	79	I/O	AD3	109	I	TI03
20	O	DRV	50	I/O	DA3	80	I/O	AD4	110	I	TI04
21	I	TI08	51	I/O	DA2	81	I/O	AD5	111	O	TO03
22	O	TO05	52	I/O	DA1	82	I/O	AD6	112	I	TI05
23	O	TO01	53	I/O	DA0	83	I/O	AD7	113	I	TI06
24	I	TI01	54	I/O	DAF	84	I/O	AD8	114	I	TSNR
25	I	TI02	55	I/O	DAE	85	I/O	AD9	115	I	TWEB
26	O	TO06	56	I/O	DAD	86	I/O	ADA	116	I	TT0E
27	I	TI10	57	I/O	DAC	87	O	OPTW	117	I	TTCS
28	I	TI11	58	I/O	DAB	88	O	OPTO	118	I	CLOCK
29	I	TI09	59	I	IOEN	89	I	OLD	119	O	OSO
30	-	VDD	60	-	GND	90	-	VDD	120	-	GND

# HD6475368F-FMY13-01 (HITACHI) FLAT PACKAGE

C-MOS MICRO COMPUTER UNIT  
-TOP VIEW-



PIN No.	IO	SIGNAL	PIN No.	IO	SIGNAL	PIN No.	IO	SIGNAL	PIN No.	IO	SIGNAL
1	IO	P21/RW	21	IO	P40/A0	41	IO	P63/A19	61	IO	P80/FTOA2
2	IO	P22/DS	22	IO	P41/A1	42	—	VDD	62	IO	P81/FTOA3
3	IO	P23/RD	23	IO	P42/A2	43	IO	P70/TMC1	63	IO	P82/PW1
4	IO	P24/WR	24	IO	P43/A3	44	IO	P71/FTI1	64	IO	P83/PW2
5	—	VDD	25	IO	P44/A4	45	IO	P72/FTI2	65	IO	P84/PW3
6	I	MD0	26	IO	P45/A5	46	IO	P73/FTI3/TMR1	66	IO	P85/TXD
7	I	MD1	27	IO	P46/A6	47	IO	P74/FTO1/FTCI1	67	IO	P86/RXD
8	I	MD2	28	IO	P47/A7	48	IO	P75/FTO2/FTCI2	68	IO	P87/SCK
9	I	STBY	29	—	GND	49	IO	P76/FTO3/FTCI3	69	I	EXTAL
10	I	RES	30	IO	P50/A8	50	IO	P77/FTOA1	70	I	XTAL
11	I	NMI	31	IO	P51/A9	51	I	AGND	71	—	GND
12	—	GND	32	IO	P52/A10	52	I	P80/AN0	72	IO	P10/φ
13	IO	P30/D0	33	IO	P53/A11	53	I	P81/AN1	73	IO	P11/E
14	IO	P31/D1	34	IO	P54/A12	54	I	P82/AN2	74	IO	P12/BACK
15	IO	P32/D2	35	IO	P55/A13	55	I	P83/AN3	75	IO	P13/BREQ
16	IO	P33/D3	36	IO	P56/A14	56	I	P84/AN4	76	IO	P14/WAIT
17	IO	P34/D4	37	IO	P57/A15	57	I	P85/AN5	77	IO	P15/IRQ0
18	IO	P35/D5	38	IO	P58/A16	58	I	P86/AN6	78	IO	P16/IRQ1
19	IO	P36/D6	39	IO	P59/A17	59	I	P87/AN7	79	IO	P17/TMO
20	IO	P37/D7	40	IO	P60/A18	60	I	AVDD	80	IO	P20/AS

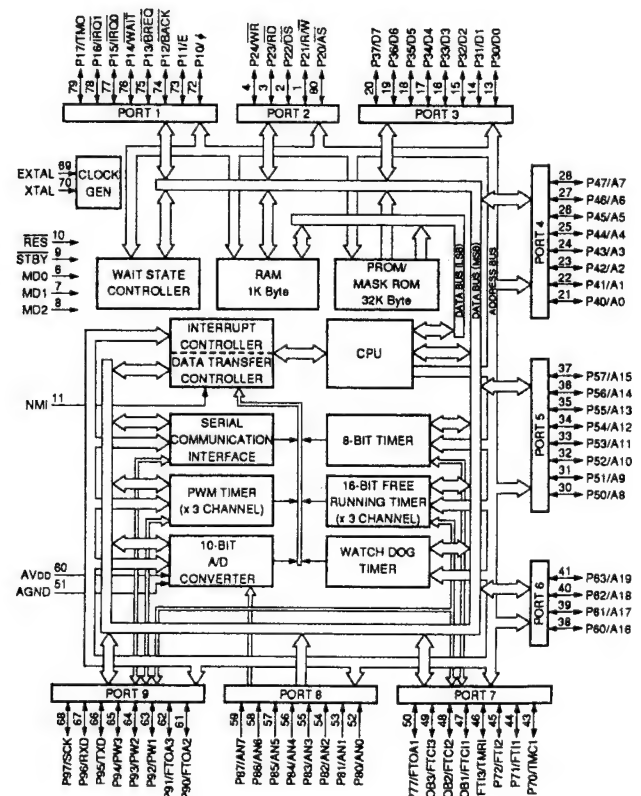
(VDD = +5V)

**INPUT**  
AGND : GND FOR A/D CONVERTER  
ANO-AN7 : ANALOG  
AVDD : REFERENCE VOLTAGE FOR A/D CONVERTER  
BREQ : BAS REQUEST  
EXTAL : CRYSTAL OSCILLATOR & EXTERNAL CLOCK (φ CLOCK x 2)  
FTCI1-FTCI3 : FRT COUNTER CLOCK  
FTI1-FTI3 : FRT INPUT CAPTURE  
IRQ0,IRQ1 : INTERRUPT REQUEST  
MD0-MD2 : MODE SETTING  
NMI : NON-MASKABLE INTERRUPT  
P80-P87 : PORT 8  
RES : RESET  
RXD : RECEIVE DATA  
STBY : STANDBY  
TMC1 : 8-BIT TIMER CLOCK  
TMR1 : 8-BIT TIMER COUNTER RESET  
WAIT : WAIT  
XTAL : CRYSTAL OSCILLATOR (φ CLOCK x 2)

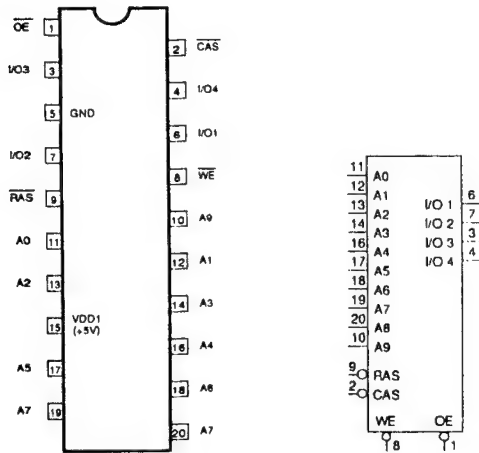
**OUTPUT**  
φ : SYSTEM CLOCK  
A0-A19 : ADDRESS BUS  
AS : ADDRESS STROBE  
BACK : BAS REQUEST ACKNOWLEDGE  
DS : DATA STROBE  
E : ENABLE CLOCK  
FTOA1-FTOA3 : FRT OUTPUT COMPEA A  
FTOB1-FTOB3 : FRT OUTPUT COMPEA B  
PW1-PW3 : PWM TIME  
RD : READ  
R/W : READ/WRITE  
TMO : 8-BIT TIMER  
TXD : TRANSCIVE DATA  
WR : WRITE

**INPUT/OUTPUT**  
DO-07 : DATA BUS  
P10-P17 : PORT 1  
P20-P24 : PORT 2  
P30-P37 : PORT 3  
P40-P47 : PORT 4  
P50-P57 : PORT 5  
P60-P63 : PORT 6  
P70-P77 : PORT 7  
P80-P87 : PORT 9  
SCK : SERIAL CLOCK

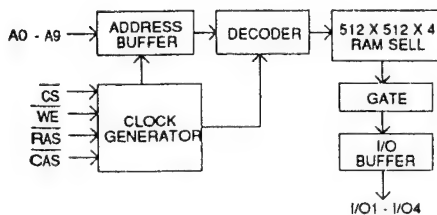
4	P24/WR	P17/TMO	79
3	P23/RD	P16/IRQ1	78
2	P22/DS	P15/IRQ0	77
1	P21/RW	P14/WAIT	76
80	P20/AS	P13/BREQ	75
		P12/BACK	74
		P11/E	73
		P10/φ	72
29	P47/A7	P37/D7	20
27	P46/A6	P36/D6	19
26	P45/A5	P35/D5	18
25	P44/A4	P34/D4	17
24	P43/A3	P33/D3	16
23	P42/A2	P32/D2	15
22	P41/A1	P31/D1	14
21	P40/A0	P30/D0	13
41	P63/A19	P57/A15	37
40	P62/A18	P56/A14	36
39	P61/A17	P55/A13	35
38	P60/A16	P54/A12	34
		P53/A11	33
		P52/A10	32
		P51/A9	31
		P50/A8	30
59	P87/AN7	P77/FTOA1	50
58	P86/AN6	P76/FTOB3/FTCI3	49
57	P85/AN5	P75/FTOB2/FTCI2	48
56	P84/AN4	P74/FTOB1/FTCI1	47
55	P83/AN3	P73/FTI3/TMR1	46
54	P82/AN2	P72/FTI2	45
53	P81/AN1	P71/FTI1	44
52	P80/AN0	P70/FTI0	43
69	EXTAL	P97/SCK	68
70	XTAL	P96/RXD	67
		P95/TXD	66
10	RES	P94/PW3	65
9	STBY	P93/PW2	64
8	MD0	P92/PW1	63
7	MD1	P91/FTOA3	62
6	MD2	P90/FTOA2	61
51	AVDD		
50	AGND		



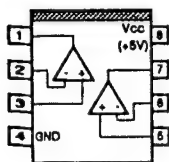
HM514400AS7GS-EL (HITACHI)  
C-MOS 4 BIT DYNAMIC RAM  
- TOP VIEW -



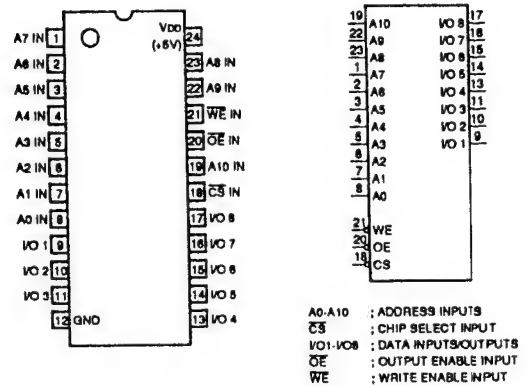
A0 - A9 : ADDRESS INPUT  
CAS : COLUMN ADDRESS STROBE  
I/O 1 - I/O 4 : DATA INPUT/OUTPUT  
RAS : ROW ADDRESS STROBE  
OE : OUTPUT ENABLE INPUT  
WE : WRITE ENABLE INPUT



LM358D (TI) FLAT PACKAGE  
OPERATIONAL AMPLIFIERS  
- TOP VIEW -



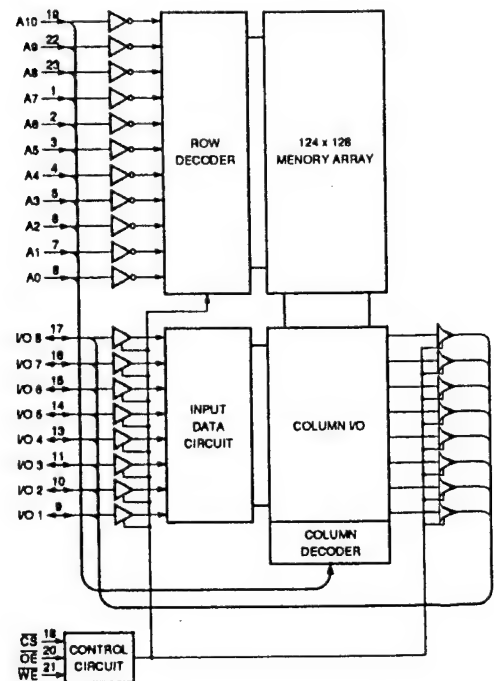
IDT6116SA25S0 (IDT) FLAT PACKAGE  
C-MOS 16K (2K x 8) - BIT STATIC RAM  
- TOP VIEW -



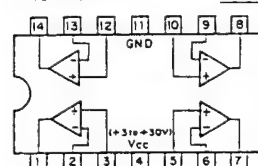
A0-A10 : ADDRESS INPUTS  
CS : CHIP SELECT INPUT  
I/O1-I/O8 : DATA INPUTS/OUTPUTS  
OE : OUTPUT ENABLE INPUT  
WE : WRITE ENABLE INPUT

MODE	CS	OE	WE	I/O
STANDBY	1	X	X	HI-Z
READ	0	0	1	DATA OUT
READ	0	1	1	HI-Z
WRITE	0	X	0	DATA IN

0 : LOW LEVEL  
1 : HIGH LEVEL  
X : DON'T CARE  
HI-Z : HIGH IMPEDANCE

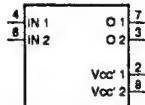
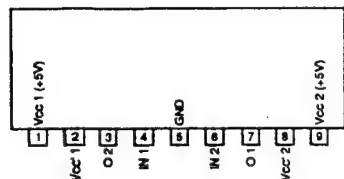


LM324D (TI)  
QUAD OPERATIONAL AMPLIFIERS  
- TOP VIEW -



# M54544AL (MITSUBISHI)

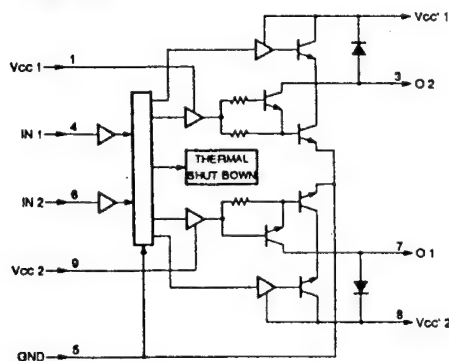
BI-DIRECTIONAL MOTOR DRIVER WITH THERMAL SHUT DOWN FUNCTION  
-PRINTED SIDE VIEW-



Vcc'1, Vcc'2: POWER SOURCE OUTPUT

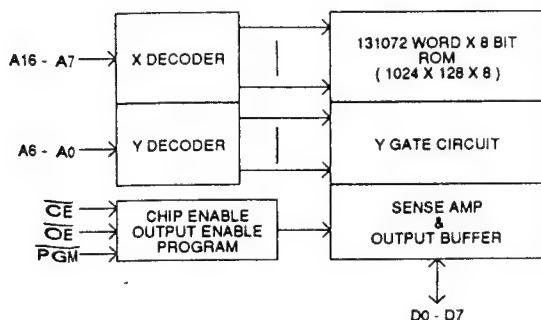
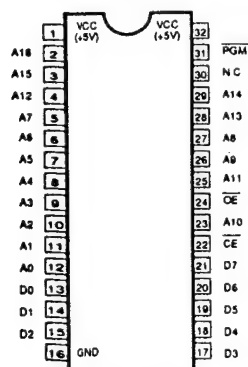
INPUT		OUTPUT		FUNCTION
IN 1	IN 2	O 1	O 2	
0	0	"OFF" STATE	"OFF" STATE	IC PASSIVITY
1	0	1	0	POSITIVE ROTATING
0	1	0	1	NEGATIVE ROTATING
1	1	0	0	BRAKE

0: LOW LEVEL  
1: HIGH LEVEL



M5M27C101FP-UP12G-E2  
M5M27C101FP-UP12M-E2  
M5M27C101FP-UP12S-E2  
C-MOS ONE TIME PROGRAMMABLE ROM

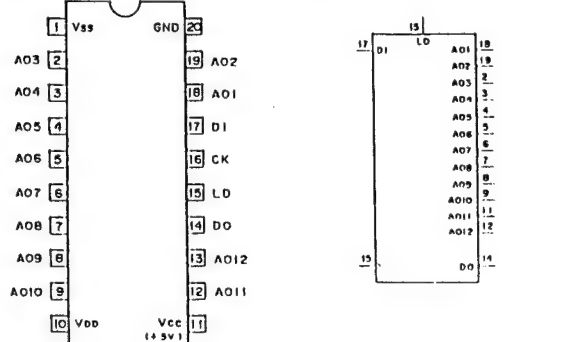
- TOP VIEW -



# M62352GP (MITSUBISHI) FLAT PACKAGE

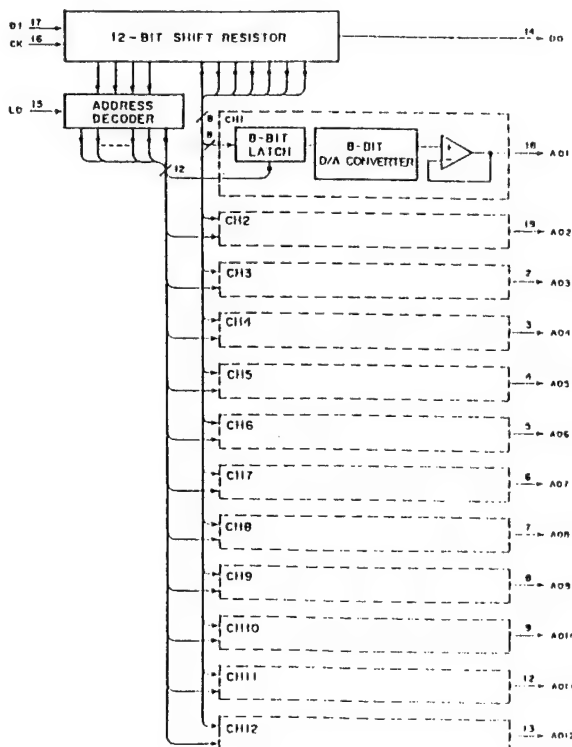
CMOS 8-BITx12 CHANNEL D/A CONVERTER  
(WITH BUFFER OPERATIONAL AMPLIFIER)

- TOP VIEW -



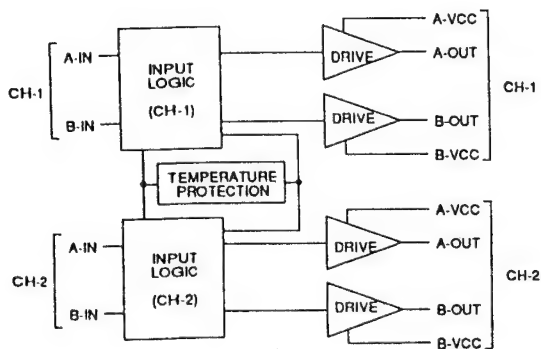
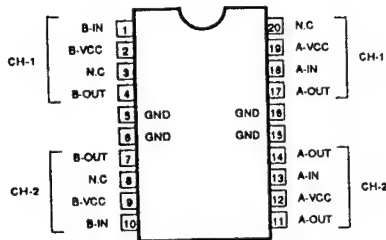
AO1 - AO12: 8 BIT D/A OUTPUT  
CK : CLOCK INPUT  
DI : SERIAL DATA INPUT  
DO : DATA OUTPUT

NOTE:  
3.5V < VDD < Vcc  
- 3.5V < Vss < Vcc

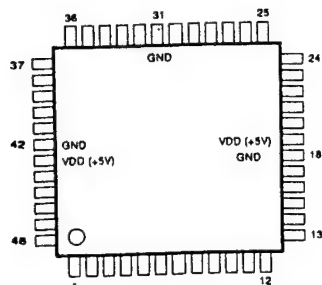




MB3863PF-G-BND  
DUAL MODE MOTOR DRIVER  
— TOP VIEW —

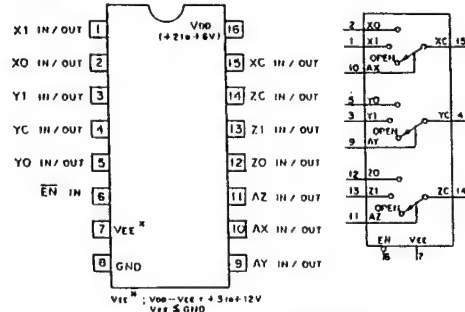


MB621948  
C-MOS GATE ARRAY  
— TOP VIEW —



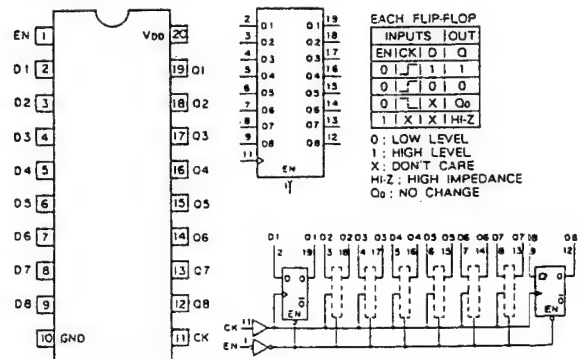
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	CBLANK	13	I	SYNC2	25	O	HPWO	37	I	NAND2
2	I	HD	14	I	SYDL0	26	O	HPWON	38	O	NAND0
3	I	VD	15	I	SYDL1	27	O	WIN	39	I	VDSEL
4	I	SYNC1	16	I	SYDL2	28	O	WINN	40	I	INTVD
5	I	CLK	17	I	SYDL3	29	O	CP	41	I	EXTVD
6	-	GND	18	-	GND	30	O	CPON	42	-	GND
7	I	NTSCPAL	19	-	VDD (+5V)	31	-	GND	43	-	VDD (+5V)
8	I	RESET	20	I	BLDL0	32	O	DLBLKO	44	O	VSELOUT
9	I	HPPD0	21	I	BLDL1	33	O	DLBLON	45	I	DLSELO
10	I	HPPD1	22	I	BLDL2	34	O	DLSYO	46	I	DLSEL1
11	I	HPPD2	23	I	BLDL3	35	O	DLSYON	47	I	THDL
12	I	HPPD3	24	I	TEST	36	I	NAND1	48	I	TESTHPWO

MC74HC4053F (MOTOROLA) FLAT PACKAGE  
CMOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER  
— TOP VIEW —



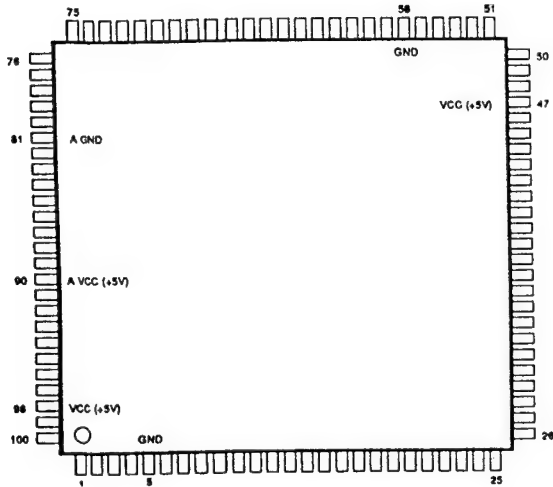
CONT. INPUTS	ON
EN	A (X,Y,Z)
0	0
1	1
X	DONT CARE
1	X
	OPEN

MC74HC574AF (MOTOROLA) FLAT PACKAGE  
— TOP VIEW —

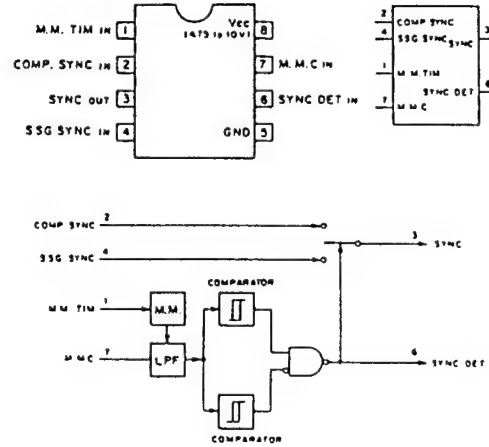


TYPE	VDD
74AC/74HC	+2 to -6V
74ACT/74FCT/74HCT	+5V
TC74AC574F/TC74VHC574	+2 to +5.5V

MB89093PFV-G-125-BND  
C-MOS 8 BIT MICROCOMPUTER  
- TOP VIEW -

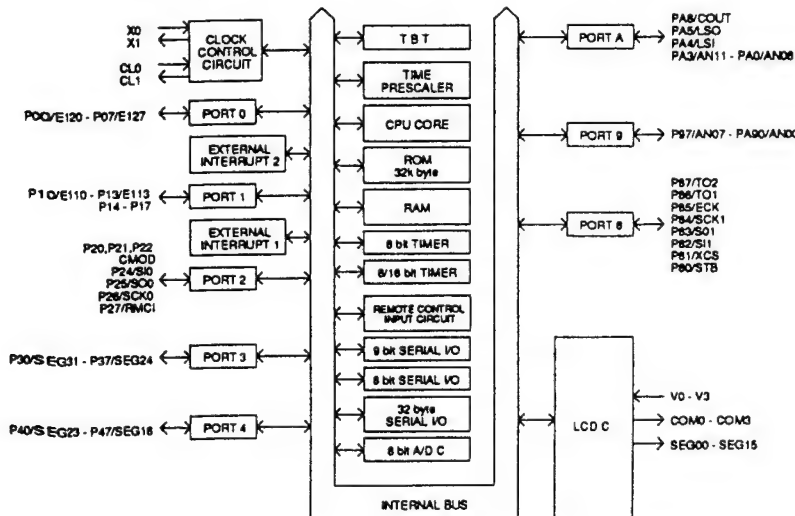
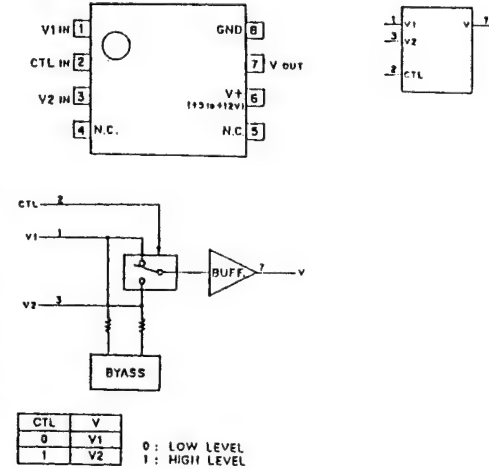


NJM2230M (JRC) FLAT PACKAGE  
VIDEO SIGNAL DETECTOR  
- TOP VIEW -



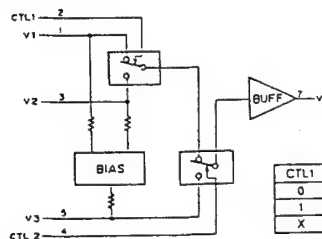
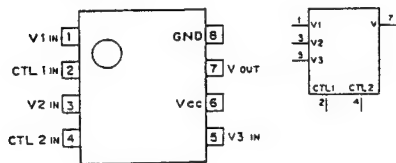
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	MOD0	26	VO	CMOD	51	O	SEG12	76	VO	P83/SO1
2	I	MOD1	27	VO	P24/SIO	52	O	SEG11	77	VO	P84/SCK1
3	I	X0	28	VO	P25/SO0	53	O	SEG10	78	VO	P85/ECK
4	O	X1	29	VO	P26/SCK0	54	O	SEG09	79	VO	P86/TO1
5	-	VSS	30	VO	P27/RMCI	55	O	SEG08	80	VO	P87/TO2
6	I	XRST	31	VO	P30/SEG31	56	-	VSS	81	-	A VSS
7	I/O	P00/E120	32	VO	P31/SEG30	57	O	SEG07	82	VO	P80/AN00
8	VO	P01/E121	33	VO	P32/SEG29	58	O	SEG06	83	VO	P81/AN01
9	VO	P02/E122	34	VO	P33/SEG28	59	O	SEG05	84	VO	P82/AN02
10	VO	P03/E123	35	VO	P34/SEG27	60	O	SEG04	85	VO	P83/AN03
11	VO	P04/E124	36	VO	P35/SEG26	61	O	SEG03	86	VO	P84/AN04
12	VO	P05/E125	37	VO	P36/SEG25	62	O	SEG02	87	VO	P85/AN05
13	VO	P06/E126	38	VO	P37/SEG24	63	O	SEG01	88	VO	P86/AN06
14	VO	P07/E127	39	VO	P40/SEG23	64	O	SEG00	89	VO	P87/AN07
15	VO	P10/E110	40	VO	P41/SEG22	65	I	V3	90	-	VCC (+5V)
16	VO	P11/E111	41	VO	P42/SEG21	66	I	V2	91	VO	PA0/AN08
17	VO	P12/E112	42	VO	P43/SEG20	67	I	V1	92	VO	PA1/AN09
18	VO	P13/E113	43	VO	P44/SEG19	68	I	V0	93	VO	PA2/AN10
19	VO	P14	44	VO	P45/SEG18	69	O	COM0	94	VO	PA3/AN11
20	VO	P15	45	VO	P46/SEG17	70	O	COM1	95	VO	PA4/LSI
21	VO	P16	46	VO	P47/SEG16	71	O	COM2	96	VO	PA5/LSO
22	VO	P17	47	-	VCC (+5V)	72	O	COM3	97	VO	PA6/COU
23	VO	P20	48	O	SEG15	73	VO	P80/STB	98	-	VCC (+5V)
24	VO	P21	49	O	SEG14	74	VO	P81/XCS	99	O	CL1
25	VO	P22	50	O	SEG13	75	VO	P82/SI1	100	I	CL0

NJM2233BM (JRC) FLAT PACKAGE  
2-INPUT SIGNAL VIDEO SWITCH  
- TOP VIEW -



### NJM2234M (JRC) FLAT PACKAGE

3-INPUT VIDEO SIGNAL SWITCH  
- TOP VIEW -



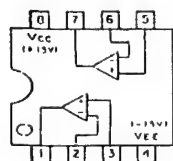
CTL1	CTL2	V
0	0	V1
1	0	V2
X	1	V3

0 : LOW LEVEL  
1 : HIGH LEVEL  
X : DONT CARE

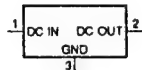
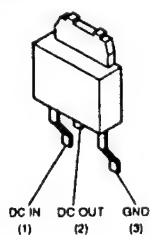
TYPE	GAIN	Vcc
NJM2234M	0 dB	+5 to +12V
NJM2245M	+6 dB	+8.5 to +13V

### NJM4560M (JRC) FLAT PACKAGE

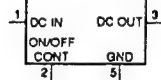
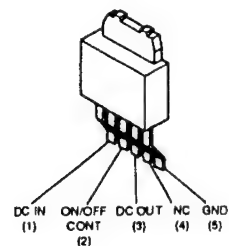
DUAL OPERATIONAL AMPLIFIER  
- TOP VIEW -



### PQ05SZ1U (SHARP) SERIES REGULATOR

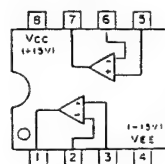


### PQ05TZ1U (SHARP) SERIES REGULATOR



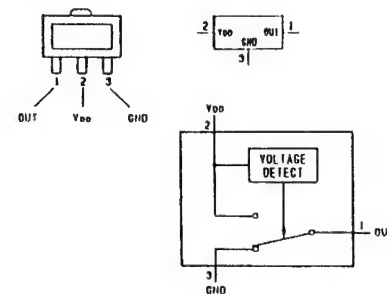
### RC4558PS (TI) FLAT PACKAGE

DUAL OPERATIONAL AMPLIFIER  
- TOP VIEW -



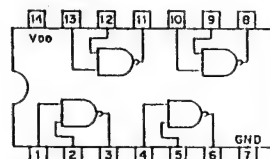
### S-8054ALB-LM-S (SEKIO I AND E) 4.00-4.30V

C-MOS VOLTAGE DETECTOR  
- TOP VIEW -



### SN74HC00ANS (TI) FLAT PACKAGE

C-MOS QUAD 2-INPUT NAND GATE  
- TOP VIEW -



$$A \text{ --- } B \text{ --- } Y = A \cdot B$$

$$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

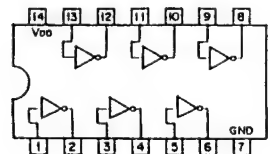
0 : LOW LEVEL  
1 : HIGH LEVEL

NOTE :

TYPE	Vcc
TC74AC00P	+2 to +5.5V
TC74AC00F	+5V
MC74HC00H	+5V
74ACT00PC	+2 to +6V
OTHER TYPES	

### SN74HC04ANS (TI) FLAT PACKAGE

C-MOS HEX INVERTERS  
- TOP VIEW -



$$A \text{ --- } Y = \overline{A}$$

A	Y
0	1
1	0

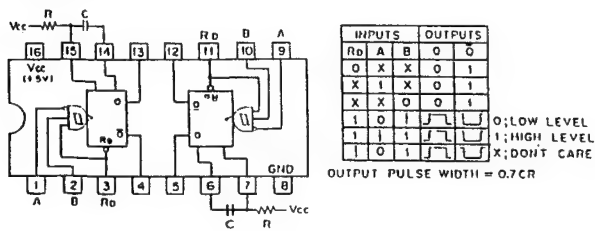
0 : LOW LEVEL  
1 : HIGH LEVEL

NOTE :

TYPE	Vcc
74HCT04 TYPE	+5V
74VHC	+2 to +5.5V
TC74AC04 TYPE	+2 to +5.5V
74ACT04 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

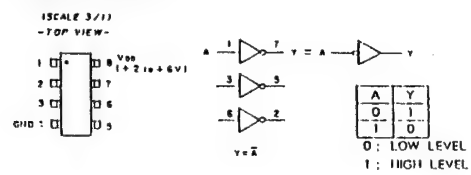
### SN74LS221NS (TI) FLAT PACKAGE

TTL MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT  
- TOP VIEW -



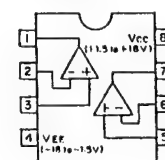
### TC7WU04F (TOSHIBA) CHIP PACKAGE

CMOS HEX INVERTERS



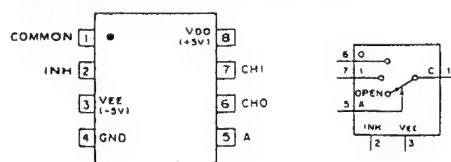
### TL082CPS (TI) FLAT PACKAGE

OPERATIONAL AMPLIFIER  
(JFET INPUT)  
- TOP VIEW -



### TC4W53F (TOSHIBA) FLAT PACKAGE

CMOS 2-CHANNEL MULTIPLEXER/DEMULTIPLEXER  
- TOP VIEW -

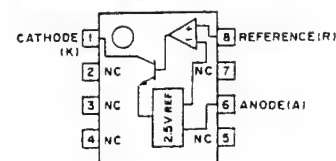


CONT. INPUT		ON CHANNEL	
INH.	A		
0	0	0	0
0	1	1	1
1	1	X	OPEN

0: LOW LEVEL  
1: HIGH LEVEL  
X: DON'T CARE

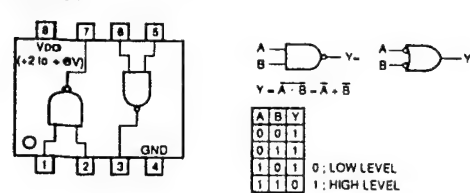
### TL431CM (TI) FLAT PACKAGE

PROGRAMMABLE SHUNT REGULATOR DIODE



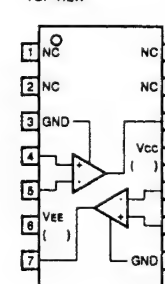
### TC7W00F (TOSHIBA) FLAT PACKAGE

CMOS DUAL 2-INPUT NAND GATE  
- TOP VIEW -



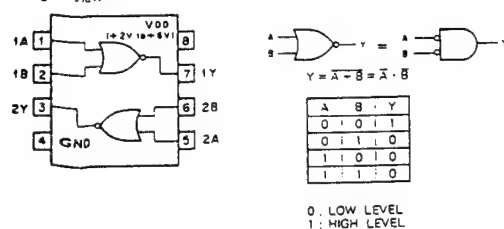
### UPC319G2 (NEC) FLAT PACKAGE

DUAL VOLTAGE COMPARATOR  
- TOP VIEW -

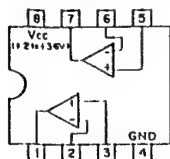


### TC7W02F (TOSHIBA) FLAT PACKAGE

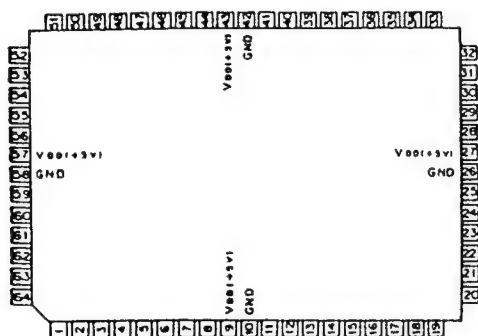
CMOS DUAL 2-INPUT NOR GATE  
- TOP VIEW -



UPC393G2 (NEC) FLAT PACKAGE  
DUAL VOLTAGE COMPARATORS  
- TOP VIEW -

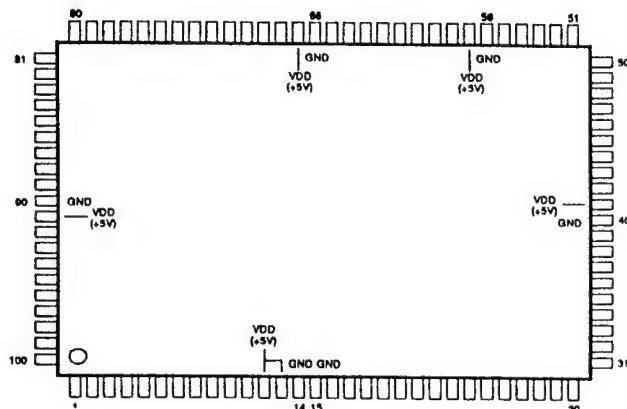


UPD65006GF-250-3B8 (NEC)  
C-MOS  
- TOP VIEW -



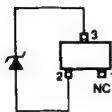
PIN NO.	PIN NAME	PIN NO.	PIN NAME	PIN NO.	PIN NAME	PIN NO.	PIN NAME
1		17	P8	33		49	INT V0
2		18	P9	34		50	
3	MEMO HDL	19	P10	35	HDL7	51	
4	SWD HDL	20	CAS1	36	HDL6	52	INT HD
5	SWD V0	21	CAS2	37	HDL5	53	INT SYNC
6	VBLK	22	CUP	38	HDL4	54	SWD HD
7	P0	23	VBLK	39	HDL3	55	MEMO SYNC
8	P1	24	AEN	40	HDL2	56	316 DET
9	V00	25	IN/M	41	HDL1	57	V00
10	GND	26	GND	42	GND	58	GND
11	P2	27	V00	43	V00	59	HD
12	P3	28	HD RET	44	D/A CK	60	SYNC
13	P4	29	HD OUT	45	RAS	61	V0
14	P5	30	RES	46	CK	62	316 DET
15	P6	31	HDL9	47	EXT D/A	63	316/5P4
16	P7	32	HDL8	48	INT D/A	64	IN/MEMO

UPD65013GF-407-3B8  
C-MOS GATE ARRAY  
- TOP VIEW -



PIN No.	IO	SIGNAL	PIN No.	IO	SIGNAL	PIN No.	IO	SIGNAL	PIN No.	IO	SIGNAL
1		CS10	26		CAS2	51		A0	76		G2BE
2		CS00	27		CAS1	52		A1	77		G1AE
3		MFY3	28		CAS0	53		A2	78		G1BE
4		MY3	29		RAS9	54		A3	79		G1AW
5		MY2	30		RAS8	55		A4	80		G1BW
6		MY1	31		RAS7	56		GND	81		R2AW
7		MY0	32		RAS6	57		VDD (+5V)	82		R2BW
8		Y3	33		RAS5	58		A5	83		R2AE
9		Y2	34		RAS4	59		A6	84		R2BE
10		Y1	35		RAS3	60		A7	85		R1AE
11		Y0	36		RAS2	61		A8	86		R1BE
12		VDD (+5V)	37		RAS1	62		A9	87		R1AW
13		VDD (+5V)	38		RAS0	63		B2BW	88		R1BW
14		GND	39		CAS5	64		B2AE	89		INMB
15		GND	40		GND	65		B2AW	90		GND
16		CS2B	41		VDD (+5V)	66		GND	91		VDD (+5V)
17		CRB	42		CAS6	67		VDD (+5V)	92		AEN
18		CS1B	43		CAS7	68		B2BE	93		HBL
19		BCBB	44		CAS8	69		B1AE	94		VBL
20		BCGB	45		ABRB	70		B1BE	95		CUP
21		BCRB	46		CAS9	71		B1AW	96		CRY
22		MBRW	47		CS0	72		B1BW	97		CS4
23		FTHB	48		CS1	73		G2AW	98		CS40
24		CAS4	49		CS2	74		G2BW	99		CS30
25		CAS3	50		CS3	75		G2AE	100		CS20

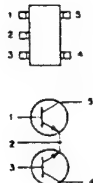
02CZ2.0

(SCALE 5/1)  
-TOP VIEW-

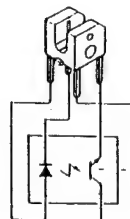
1T33C-01



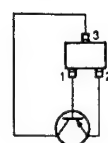
2SC4207

(SCALE 5/1)  
TOP VIEW

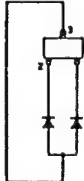
GP1S23



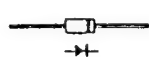
MAS1586

(SCALE 5/1)  
-TOP VIEW-

1S2836

(SCALE 4/1)  
TOP VIEW

10E-2

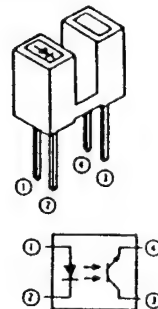


2SD992

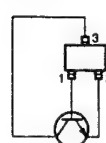
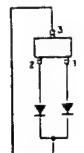
(SCALE 2/1)



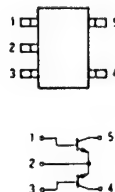
GP1S54



MSC4116

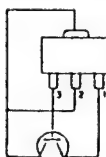
(SCALE 5/1)  
-TOP VIEW-1S2837  
1SS302  
MA152WK(SCALE 4/1)  
TOP VIEW

2SA1618



2SD999-CLCK

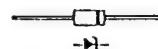
TOP VIEW (SCALE 4/1)



GP2S40K



RD9.1EW



1SS226

(SCALE 4/1)  
TOP VIEW

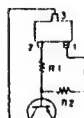
2SB962

(SCALE 2/1)

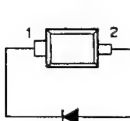


DTA114EK

TOP VIEW (SCALE 4/1)



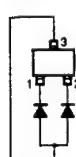
MA728

(SCALE 6/1)  
TOP VIEW

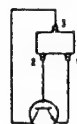
RN1302-TE85L



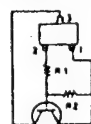
1SS300

(SCALE 5/1)  
-TOP VIEW-

2SC1623

(SCALE 4/1)  
TOP VIEWDTC114EK  
DTC124EK  
DTC144EK

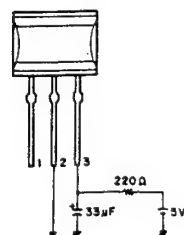
TOP VIEW (SCALE 4/1)



MA8027-L

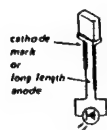
(SCALE 4/1)  
TOP VIEW

SBX8015-H

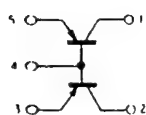
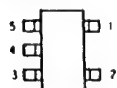
1: Rout  
2: GND  
3: Vcc



# SLP-255B

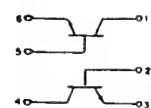


## XN2401

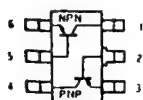


## XN4501

ISCALE 6/11  
TOP VIEW



## XN4601



## SECTION 5 EXPLODED VIEWS

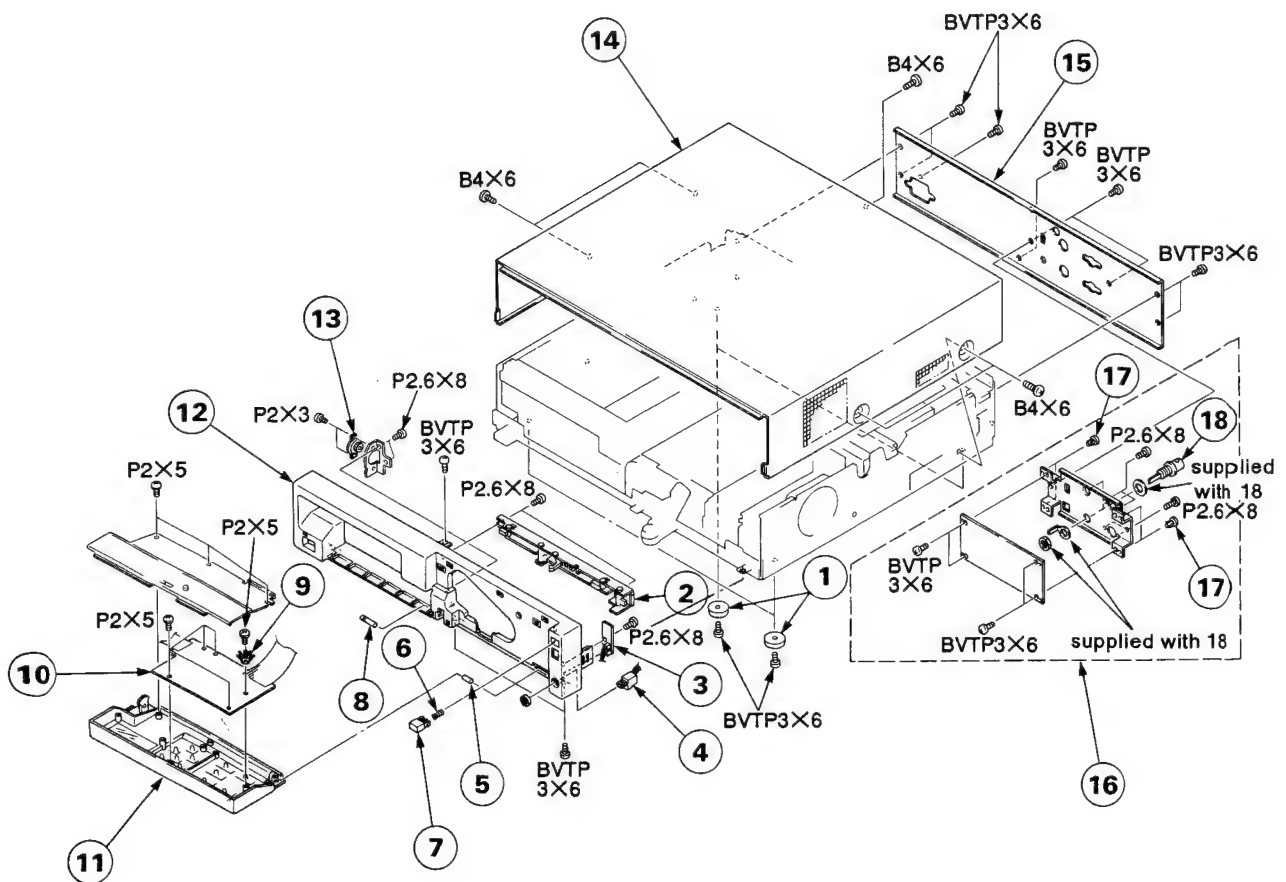
### NOTE:

Items with no part number and no description are not stocked because they are seldom required for routine service.

Items marked " \* " are not stocked because they are seldom required for routine servicing. Some delay should be expected when ordering these items.

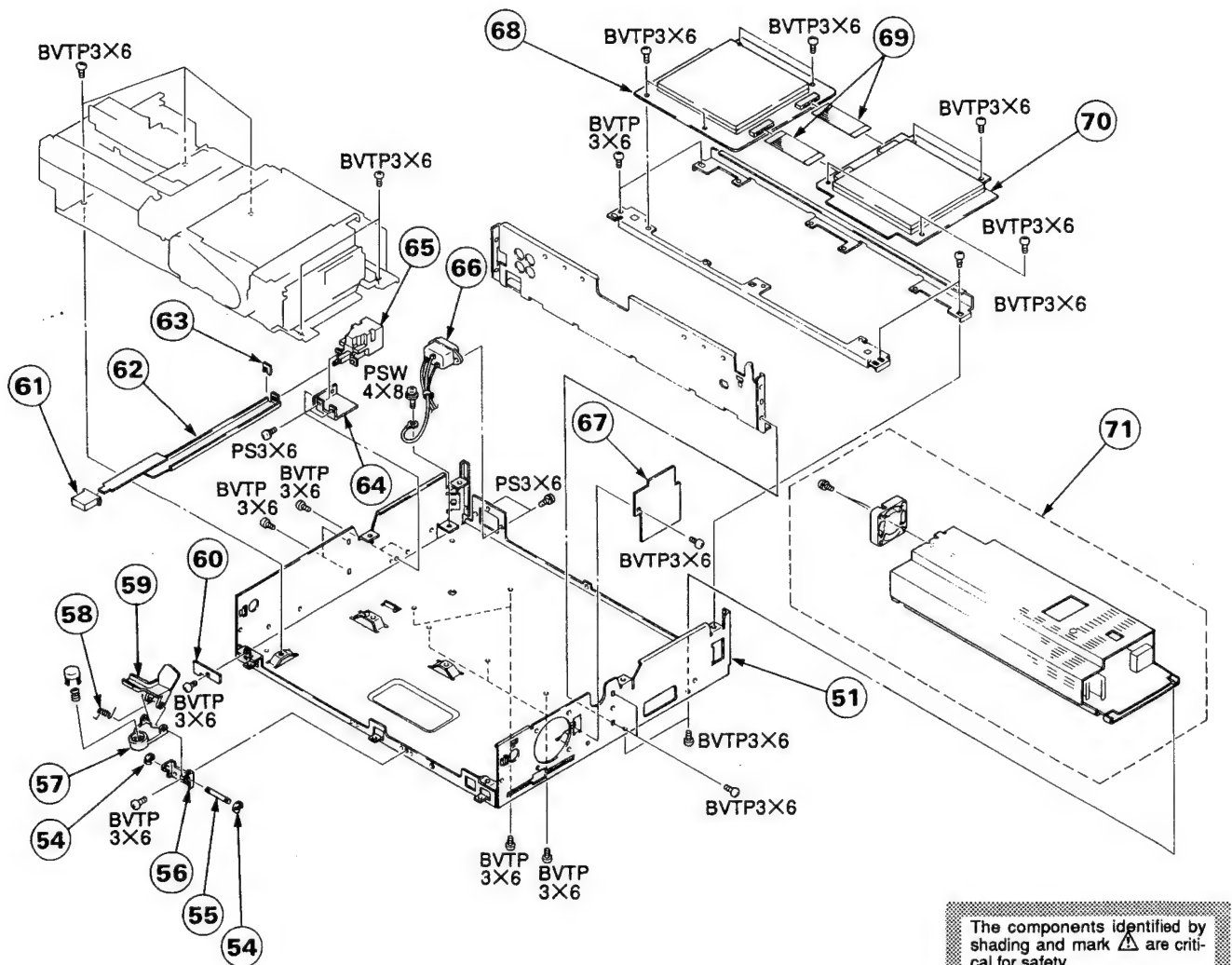
The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

### 5-1. CABINET ASSEMBLY



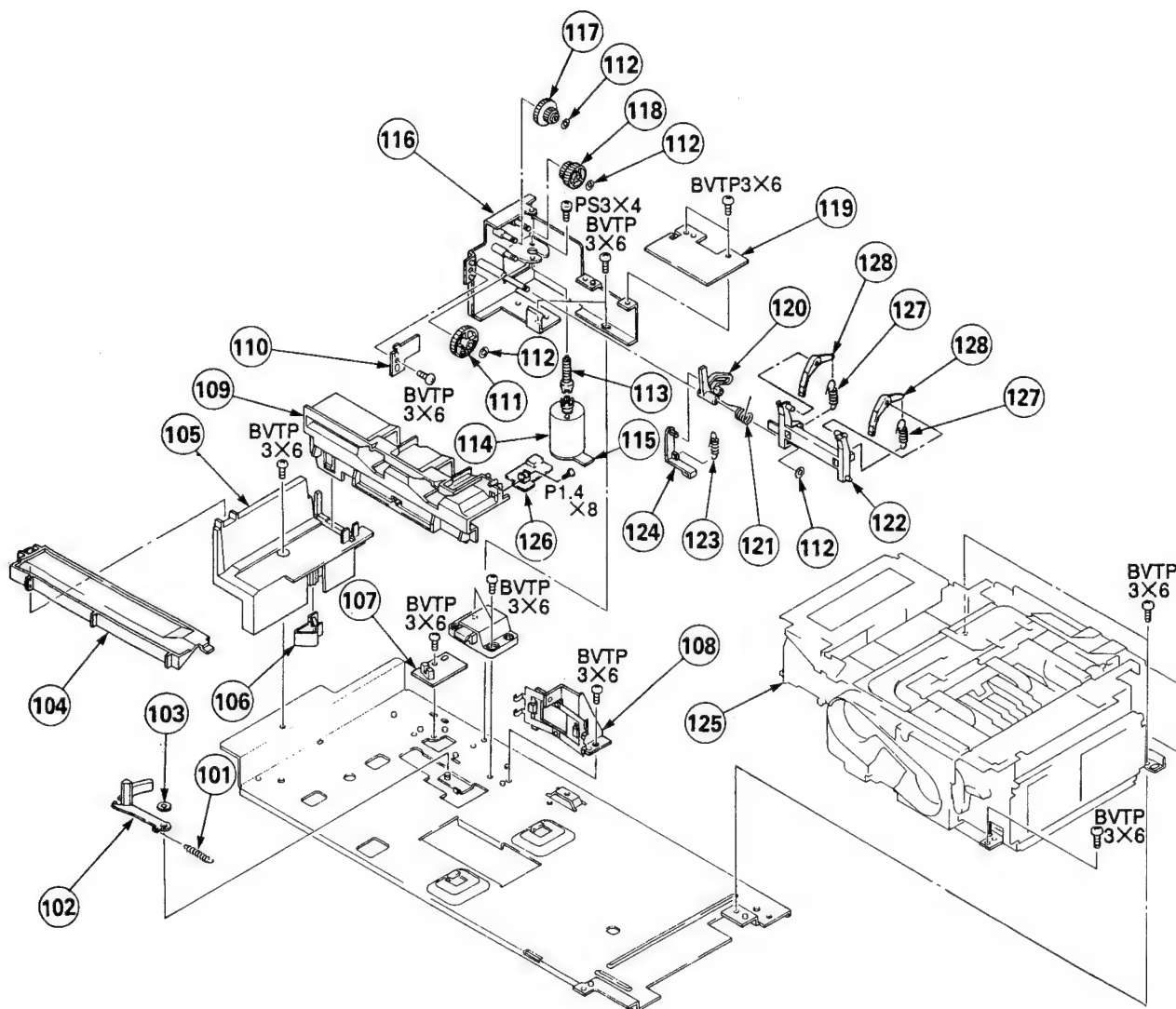
Ref. No	Part No.	Description	Remark	Ref. No	Part No.	Description	Remark
1	X-4816-109-1	FOOT ASSY, MINI		10	1-692-855-21	KEYBOARD, FFC WITH	
2	A-8267-875-C	CLOSE ASSY, DOOR OPEN		11	X-3167-408-1	PANEL SUB ASSY, DOOR	
3	*A-8275-451-A	PTC-27 BOARD, COMPLETE		12	X-3167-373-2	PANEL SUB ASSY, FRONT	
4	1-507-195-21	SPECIAL REMOTE CONTROL JACK		13	3-712-786-21	DUMPER, OIL	
5	3-183-189-01	SHAFT (R), DOOR FULCRUM		14	*3-183-254-01	COVER, TOP	
6	3-183-581-02	SPRING, COMPRESSION COIL		15	*3-183-247-11	PANEL, REAR (VIDEO)	
7	3-183-186-03	BUTTON, OPEN		16	*A-8275-446-A	IF-27 BOARD, COMPLETE	
8	3-183-188-01	SHAFT (L), DOOR FULCRUM		17	3-531-576-11	RIVET, NYLON	
9	3-183-656-01	SPRING (KY), PLATE		18	1-562-261-41	CONNECTOR, COAXIAL (BNC)	

## 5-2. CHASSIS ASSEMBLY(1)



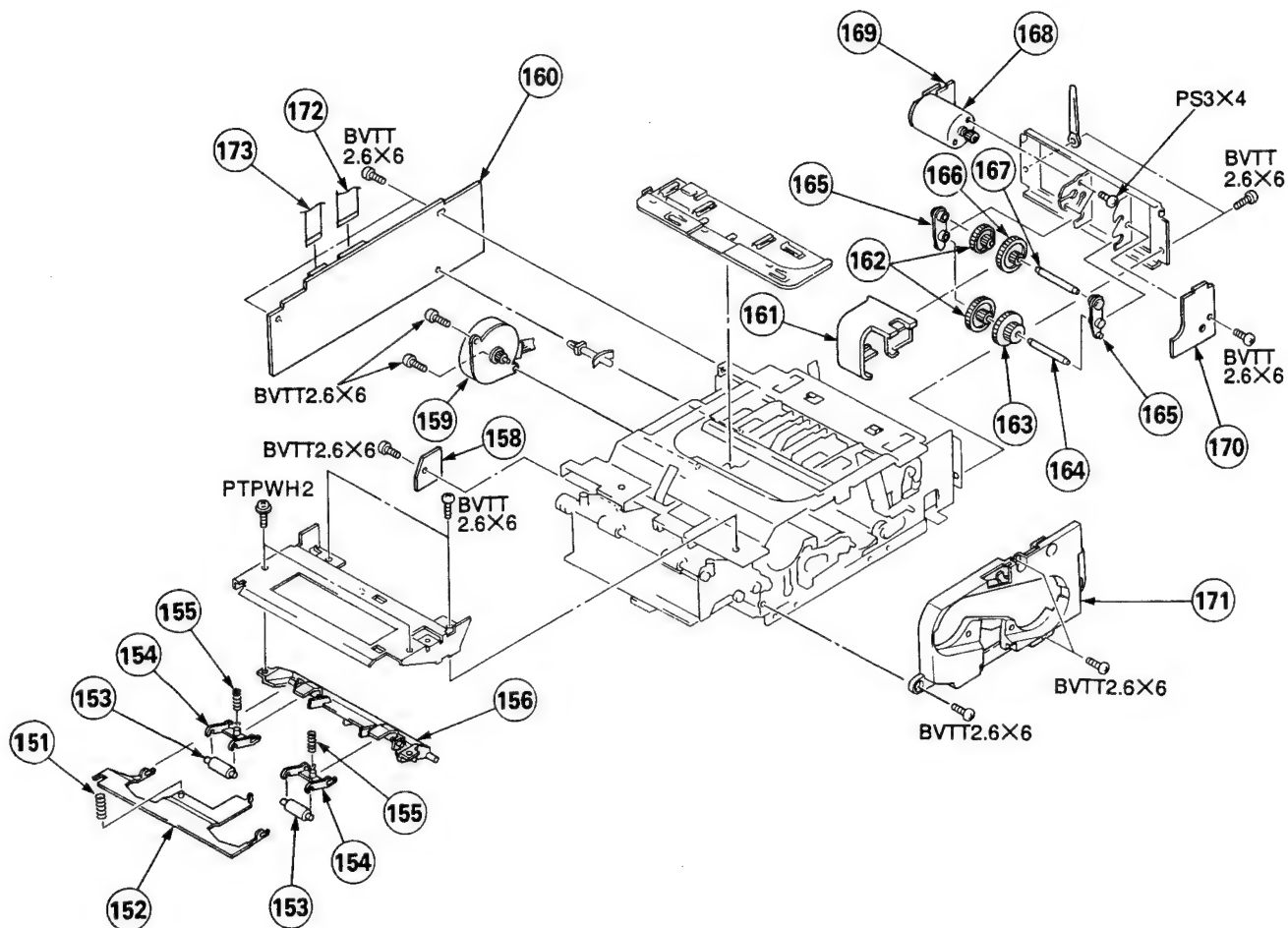
Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
51	*3-183-255-01	CHASSIS		63	3-725-616-01	STOPPER, ROD	
54	4-926-219-02	RING (DIA.2.3), RETAINING		64	*3-183-178-01	BRACKET, SWITCH	
55	3-183-200-01	SHAFT, RIBBON PUSH		65	Δ1-554-880-11	SWITCH, PUSH (AC POWER) (1 KEY)	
56	3-183-187-01	PLATE, FULCRUM		66	Δ1-580-375-11	INLET 3P	
57	3-183-239-01	PLATE PUSH RIBBON		67	*A-8275-438-A	KY-15 BOARD, COMPLETE	
58	3-183-183-02	SPRING, TORSION		68	*A-8275-599-A	FMY-13P BOARD, COMPLETE	
59	3-183-238-01	DISCHARGE PLATE, RIBBON		69	1-751-235-11	CABLE, FLAT (FVM-2)	
60	*A-8275-437-A	S-25 BOARD, COMPLETE		70	*A-8275-600-A	VA-76(B) BOARD, COMPLETE	
61	2-431-568-31	BUTTON, POWER		71	Δ1-413-946-11	SWITCHING REGULATOR	
62	*3-183-226-01	ROD, SWITCH					

### 5-3. CHASSIS ASSEMBLY(2)



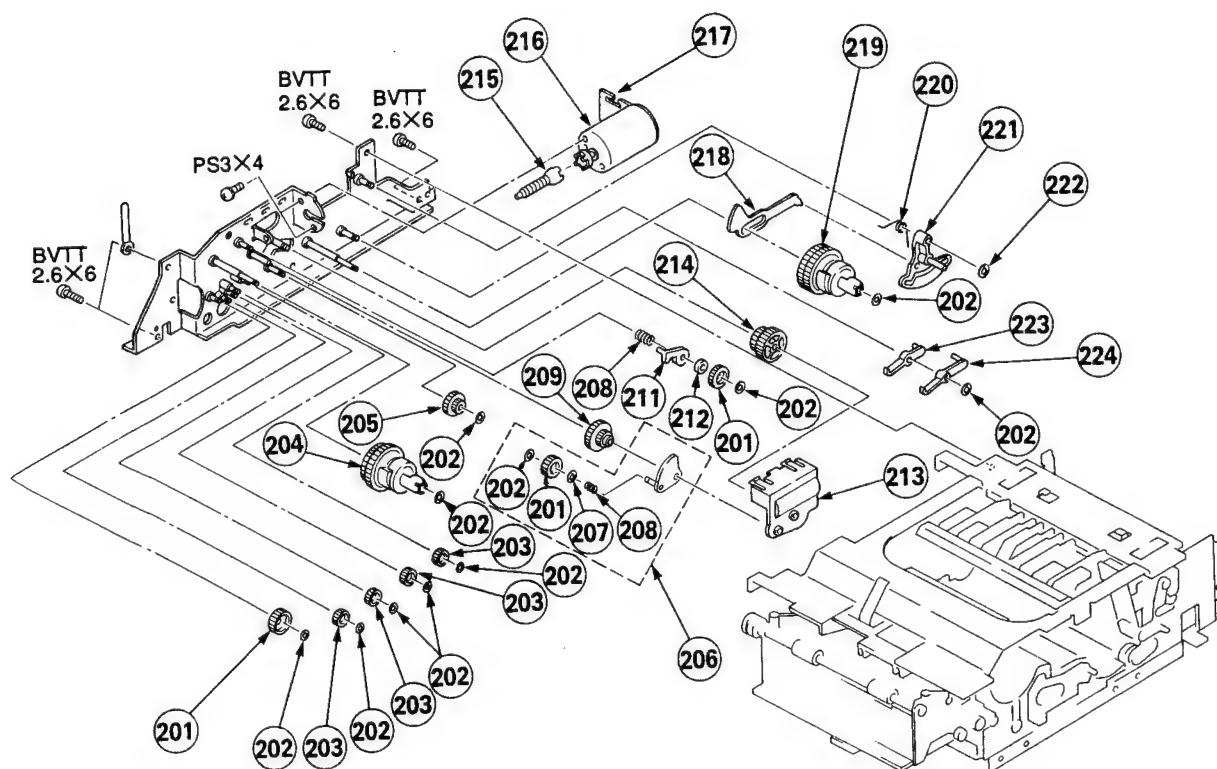
Ref. No	Part No.	Description	Remark	Ref. No	Part No.	Description	Remark
101	3-183-184-01	SPRING, EXTENSION		115	*1-650-853-12	SU-10 BOARD	
102	3-183-185-02	LEVER, PAPER SENSOR		116	X-3167-308-2	SUB ASSY, MOTOR BRACKET	
103	3-325-697-01	WASHER		117	3-950-040-01	GEAR (2), RD	
104	3-183-240-01	GUIDE, EXIT		118	3-950-039-01	GEAR (1), RD	
105	3-183-253-01	GUIDE, TRAY		119	*A-8275-445-A	DUS-12 BOARD, COMPLETE	
106	3-183-181-01	SPRING, TRAY		120	3-183-228-02	LINK	
107	*A-8275-444-A	SW-42 BOARD, COMPLETE		121	3-183-218-02	SPRING, TORSION	
108	X-3167-310-1	COUNTREMEASURE ASSY		122	3-183-251-02	ARM	
109	3-183-610-01	COVER		123	3-183-176-01	SPRING, EXTENSION	
110	*A-8275-443-A	SW-39 BOARD, COMPLETE		124	3-183-229-02	LEVER, TRAY LOCK	
111	X-3167-307-1	SUB GEAR ASSY, BOSS		125	*A-8267-804-A	MD (P231) ASSY	
112	4-926-219-02	RING (DIA. 2.3), RETAINING		126	*A-8275-442-A	SW-41 BOARD, COMPLETE	
113	3-950-038-01	GEAR, WORM		127	3-183-602-01	SPRING, TENSION COIL	
114	X-3942-172-1	MOTOR ASSY, RIBBON		128	3-183-603-02	LEVER, SUPPORT	

#### 5-4. MECHANISM DECK ASSEMBLY(1)



Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
151	3-183-629-01	SPRING, COMPRESSION (PAPER A)		163	3-950-015-01	GEAR (B), HEAD DRIVE	
152	3-183-605-01	SENSOR LEVER		164	*3-950-020-01	SHAFT, HEAD DRIVE GEAR	
153	3-950-009-01	ROLLER, PAPER		165	*3-950-017-01	HOLDER, HEAD DRIVE GEAR	
154	3-950-010-01	ARM, PAPER ROLLER		166	3-956-727-01	GEAR (E), HEAD DRIVE	
155	3-950-013-01	SPRING, COMPRESSION		167	*3-950-214-01	SHAFT (S), HEAD DRIVE GEAR	
156	3-183-609-02	GUIDE, UPPER		168	X-3942-122-1	MOTOR, HEAD DRIVE GEAR ASSY	
158	*A-8275-441-A	SW-213 BOARD, COMPLETE		169	*A-8275-435-A	SW-215 BOARD, COMPLETE	
159	X-3167-368-1	MOTOR ASSY, STEPPING		170	*A-8275-436-A	SW-212 BOARD, COMPLETE	
160	*A-8275-598-A	HM-22P(L) BOARD, COMPLETE		171	X-3167-377-1	GUIDE ASSY, CASSETTE ENTRANCE	
161	*3-952-505-01	GUARD, HEAD GEAR		172	1-765-052-11	WIRE, FLAT TYPE (16 CORE)	
162	3-950-019-01	GEAR (A), HEAD DRIVE		173	1-765-051-11	WIRE, FLAT TYPE (7 CORE)	

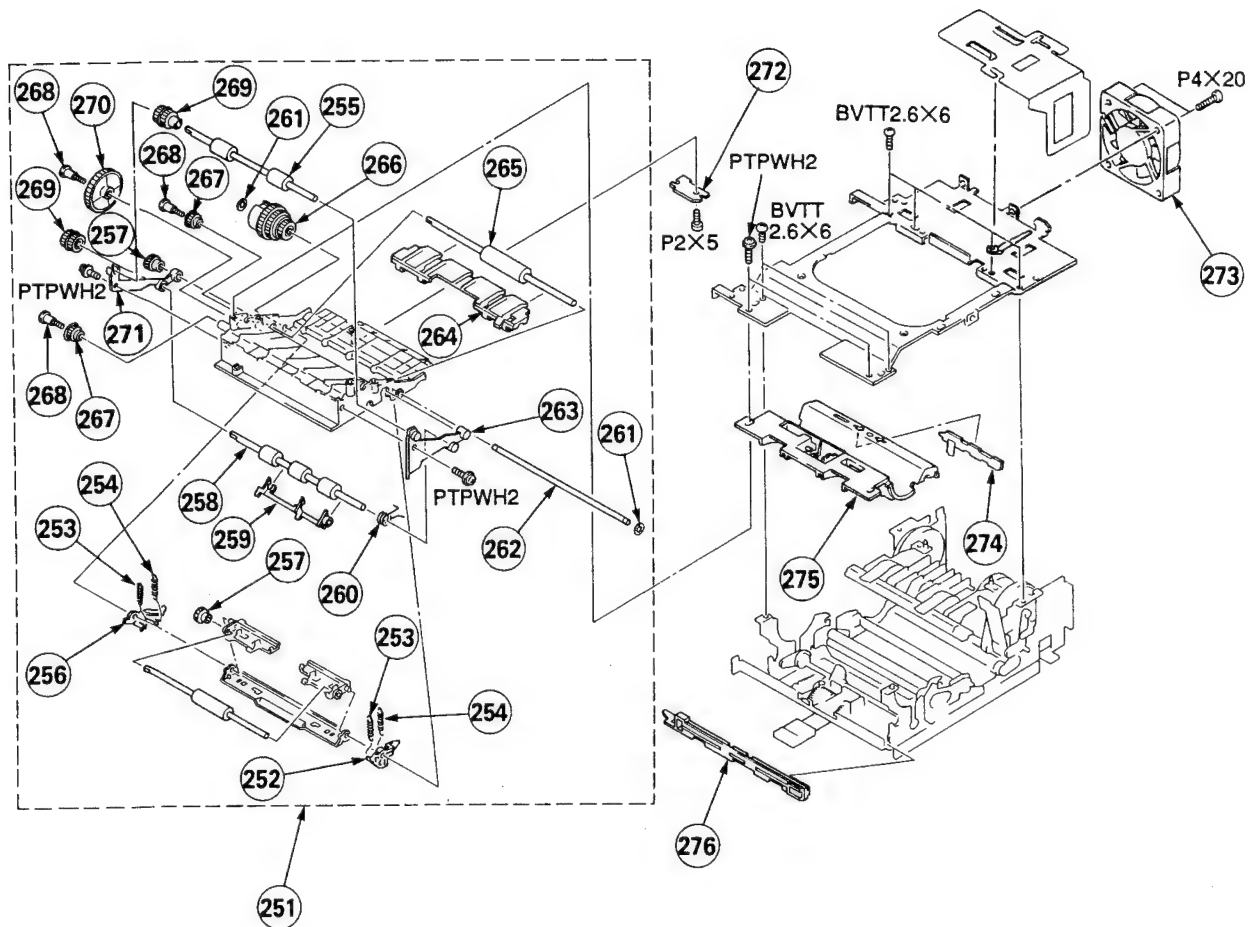
## 5-5. MECHANISM DECK ASSEMBLY(2)



Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
201	3-950-045-01	GEAR (20)		213	3-950-049-01	COVER, GEAR	
202	3-681-678-00	WASHER, STOPPER		214	3-950-039-01	GEAR (1), RD	
203	3-949-935-01	GEAR (16)		215	3-183-992-01	GEAR, WORM	
204	A-7018-137-A	REEL (T) BLOCK ASSY, RIBBON		216	X-3942-172-1	MOTOR ASSY, RIBBON	
205	3-950-048-01	GEAR, SPM IDLER		217	*A-8275-440-A	SW-216 BOARD, COMPLETE	
206	*A-7018-136-A	ARM BLOCK ASSY, PENDULUM		218	*3-950-035-01	BOARD, SLIDE	
207	3-701-441-01	WASHER		219	A-7018-138-A	REEL (S) BLOCK ASSY, RIBBON	
208	3-949-933-01	SPRING (PENDULUM), COMPRESSION		220	3-950-050-01	SPRING, TORSION	
209	3-950-040-01	GEAR (2), RD		221	*X-3942-127-1	ARM ASSY, SLIDE	
211	*3-950-046-01	ARM, T LOCK		222	4-926-219-02	RING (DIA.2.3), RETAINING	
212	3-950-051-01	FELT, T LOCK		223	*3-950-037-01	CLAW, RIBBON BRAKE	
				224	*3-950-036-01	CLAW, RIBBON LOCK	

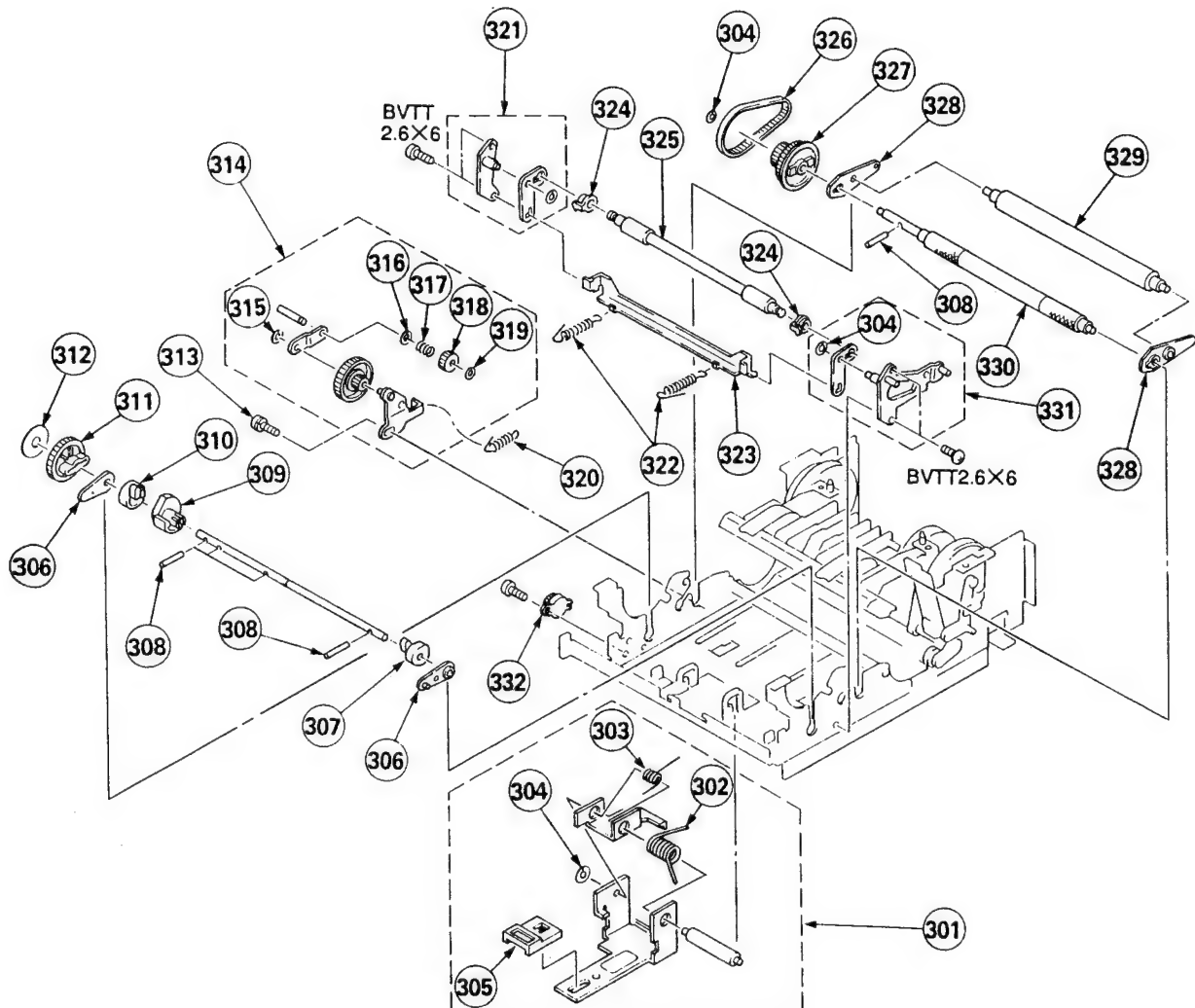


## 5-6. MECHANISM DECK ASSEMBLY(3)



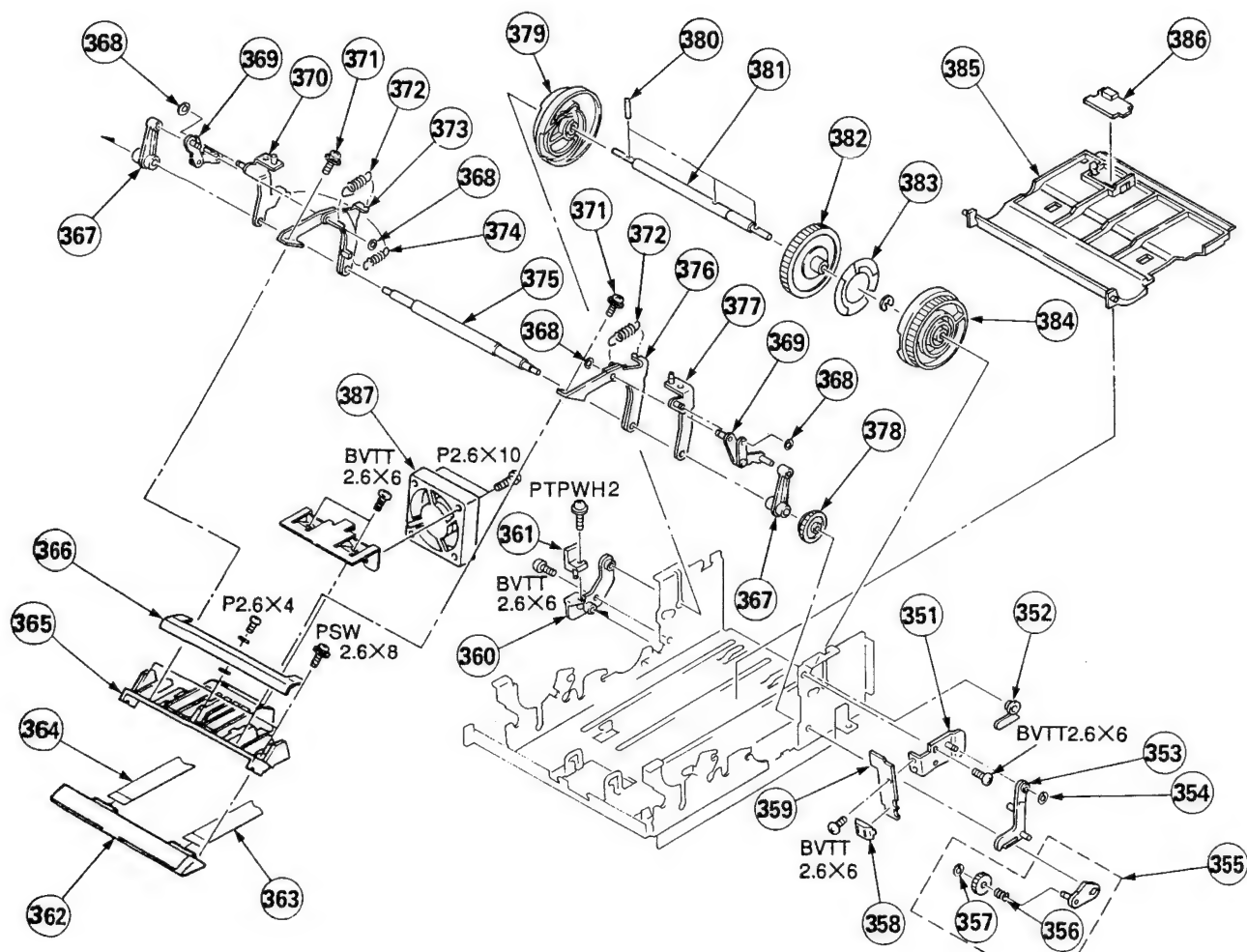
Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
251	*A-8267-975-B	PAPER ASSY		264	*3-949-985-01	SHUTTER, PAPER	
252	*3-949-984-11	LEVER (R), RELEASE		265	3-949-982-01	ROLLER (F)	
253	3-949-994-01	SPRING, TENSION		266	A-7018-141-A	LIMITER BLOCK ASSY	
254	3-949-996-01	SPRING (RELEASE LEVER), TENSION		267	3-949-989-01	GEAR (16F)	
255	3-183-205-01	ROLLER		268	3-950-001-01	SCREW, STEP	
256	*3-949-983-11	LEVER (L), RELEASE		269	3-949-988-01	GEAR (20-21)	
257	3-949-987-01	GEAR (16D)		270	3-183-206-01	GEAR	
258	3-183-607-01	ROLLER K		271	3-183-231-01	SHAFT RETAINER L (EP)	
259	*3-949-986-01	RETAINER, PAPER		272	*A-8275-433-A	SW-208 BOARD, COMPLETE	
260	3-183-204-01	SP (EP), RETAINER		273	1-541-684-41	MOTOR, DC	
261	4-926-219-02	RING (DIA.2.3), RETAINING		274	*A-8275-434-A	SW-211 BOARD, COMPLETE	
262	*3-949-990-01	SHAFT, LIMITER		275	*3-950-003-01	GUIDE (1), CASSETTE	
263	3-183-230-01	SHAFT RETAINER R (EP)		276	3-183-232-01	GUIDE, TRAY	

## 5-7. MECHANISM DECK ASSEMBLY(4)



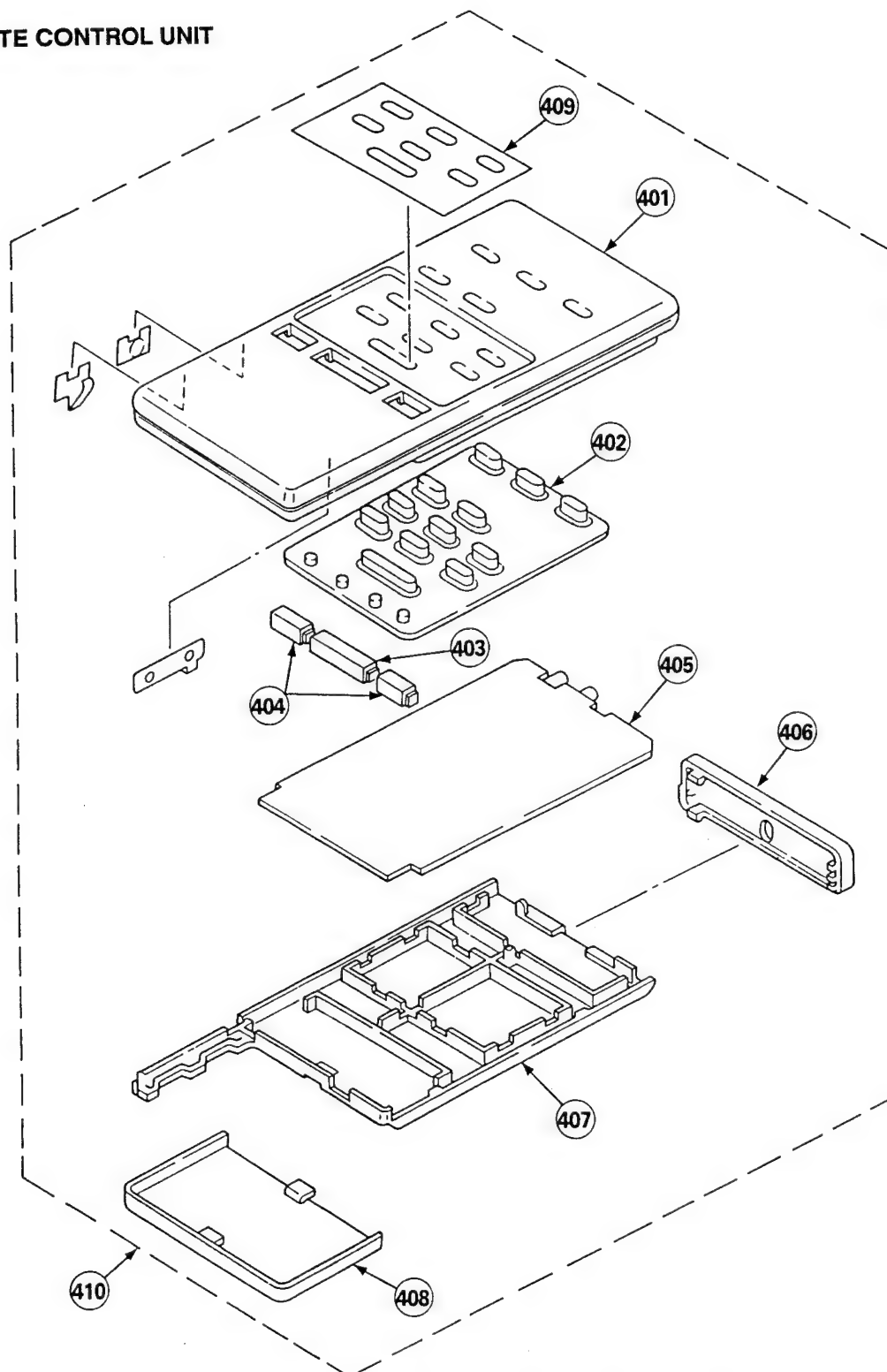
Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
301	*A-8267-878-C	ARM ASSY		317	3-949-933-01	SPRING (PENDULUM), COMPRESSION	
302	3-183-212-02	TORSION SPRING		318	3-949-935-01	GEAR (16)	
303	3-183-213-03	TORSION SPRING		319	3-681-678-00	WASHER, STOPPER	
304	4-926-219-02	RING (DIA.2.3), RETAINING		320	3-954-567-01	SPRING (TENSION PLATE), TENSION	
305	3-183-209-02	LEVER		321	*A-7018-157-A	ARM (L) BLOCK ASSY, ROLLER	
306	*3-949-912-01	BEARING, PRESS		322	3-955-157-01	SPRING, TENSION	
307	*3-950-308-01	CAM (R), RETAINER ROLLER PRESS		323	*3-949-939-01	PRESSURE, CAP	
308	3-949-911-01	PIN		324	3-949-937-01	BEARING, RETAINER ROLLER	
309	3-183-216-02	CAM		325	3-183-606-01	ROLLER, RETAINER	
310	*3-949-948-01	CAM (L), RETAINER ROLLER PRESS		326	3-949-915-01	BELT	
311	3-949-951-01	GEAR, P DRIVING		327	3-949-918-01	GEAR, CAPSTAN	
312	3-949-952-01	REFLECTOR, P SENSOR		328	3-949-910-01	BEARING, PLATEN	
313	3-951-872-01	SCREW (2.6X6)		329	*3-949-908-01	ROLLER, PLATEN	
314	A-7018-148-A	ARM BLOCK ASSY, TENSION		330	*3-949-907-01	ROLLER, CAPSTAN	
315	3-669-596-01	WASHER (2.3), STOPPER		331	*A-7018-156-A	ARM (R) BLOCK ASSY, ROLLER	
316	3-701-441-01	WASHER		332	4-036-880-01	DAMPER	

## 5-8. MECHANISM DECK ASSEMBLY(5)



Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
351	*X-3942-121-1	ARM ASSY, LOCK		369	*X-3942-117-1	LINK ASSY	
352	3-949-916-01	BEARING, CAM SHAFT		370	*X-3942-119-1	FULCRUM (L) ASSY, LINK	
353	3-950-022-01	ARM, LOCK		371	3-669-607-11	+PSW (SMALL ROUND) (2.6)	
354	3-669-596-01	WASHER (2.3), STOPPER		372	3-954-605-01	SPRING (HEAD), TENSION	
355	A-7018-146-A	GEAR BLOCK ASSY, SWING		373	*X-3942-160-1	ARM ASSY (L), POWER	
356	3-949-933-01	SPRING (PENDULUM), COMPRESSION		374	3-949-973-01	SPRING, TENSION	
357	3-681-678-00	WASHER, STOPPER		375	*3-949-950-01	SHAFT, POWER ARM	
358	*3-952-169-01	COVER, SENSOR		376	*X-3942-159-1	ARM ASSY (R), POWER	
359	*A-8275-439-A	SW-210 BOARD, COMPLETE		377	*X-3942-118-1	FULCRUM (R) ASSY, LINK	
360	*3-949-974-01	BEARING, HEAD ARM SHAFT		378	3-950-077-01	GEAR (A), RING SWING	
361	*A-8275-453-A	SW-214 BOARD, COMPLETE		379	3-949-971-01	CAM (L), HEAD POWER	
362	1-543-987-11	HEAD, THERMAL		380	3-949-911-01	PIN	
363	1-751-238-11	CABLE, FLAT (FHH-1)		381	*3-949-968-01	SHAFT, CAM	
364	1-751-239-11	CABLE, FLAT (FHH-2)		382	3-949-969-01	GEAR (C), HEAD DRIVE	
365	*3-183-612-01	HEAT SINK		383	3-949-972-01	PLATE, POSITION, HEAD	
366	*3-950-142-01	GUIDE, RIBBON		384	3-949-970-01	CAM (R), HEAD POWER	
367	3-949-917-01	LEVER, POWER		385	*3-949-909-01	GUIDE (2), CASSETTE	
368	4-926-219-02	RING (DIA.2.3), RETAINING		386	*A-8275-452-A	SW-217 BOARD, COMPLETE	
				387	1-698-019-31	MOTOR, DC (FAN)	

## 5-9. REMOTE CONTROL UNIT



Ref. No	Part No.	Description	Remark	Ref. No	Part No.	Description	Remark
401	9-901-744-01	ORNAMENTAL, PANEL		405	9-997-457-01	SR-W2 BOARD	
402	9-901-745-01	SHEET, RUBBER		406	9-997-453-01	PANEL, FRONT	
403	2-290-632-00	BUTTON, PUSH (L)		407	2-290-611-00	CASE, BOTTOM	
404	2-290-633-01	BUTTON, PUSH (R)		408	2-290-606-51	COVER, BATTERY	
				409	9-997-456-01	LABEL, MODEL NUMBER	
				410	1-465-508-21	COMMANDER, REMOTE	

## SECTION 6 ELECTRICAL PARTS LIST

VA-76(B)

**NOTE:**

- Items marked "\*" are not stocked because they are seldom required for routine servicing. Some delay should be expected when ordering these items.

- All variable and adjustable resistors have characteristic curve B, unless otherwise stated.

**RESISTORS**

- All resistors are in ohms.
- F: non-flammable

When indicating part by reference number, please include the board name.

**CAPACITORS**MF:  $\mu$ F, PF:  $\mu$   $\mu$ F**COILS**MMH: mH, UH:  $\mu$ H

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
	*A-8275-600-A	VA-76(B) BOARD, COMPLETE *****					
		<CAPACITOR>					
C101	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C149	1-164-004-11	CERAMIC 0.1 $\mu$ F	10% 25V
C102	1-164-004-11	CERAMIC 0.1 $\mu$ F	25V	C150	1-164-346-11	CERAMIC 1 $\mu$ F	16V
C103	1-124-778-00	ELECT 22 $\mu$ F	20% 6.3V	C151	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C104	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C153	1-126-217-11	ELECT 15 $\mu$ F	20% 10V
C105	1-164-346-11	CERAMIC 1 $\mu$ F	16V	C154	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C106	1-164-346-11	CERAMIC 1 $\mu$ F	16V	C155	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C107	1-163-275-11	CERAMIC 0.001 $\mu$ F	5% 50V	C156	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C108	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C157	1-126-217-11	ELECT 15 $\mu$ F	20% 10V
C109	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C158	1-164-346-11	CERAMIC 1 $\mu$ F	16V
C110	1-163-245-11	CERAMIC 56PF	5% 50V	C159	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C111	1-163-097-00	CERAMIC 15PF	5% 50V	C160	1-128-065-11	ELECT 68 $\mu$ F	20% 10V
C113	1-164-346-11	CERAMIC 1 $\mu$ F	16V	C161	1-126-206-11	ELECT 100 $\mu$ F	20% 6.3V
C114	1-163-275-11	CERAMIC 0.001 $\mu$ F	5% 50V	C162	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C115	1-124-778-00	ELECT 22 $\mu$ F	20% 6.3V	C163	1-128-065-11	ELECT 68 $\mu$ F	20% 10V
C116	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C164	1-126-206-11	ELECT 100 $\mu$ F	20% 6.3V
C117	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C165	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C118	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C166	1-126-217-11	ELECT 15 $\mu$ F	20% 10V
C119	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C167	1-163-241-11	CERAMIC 39PF	5% 50V
C120	1-163-141-00	CERAMIC 0.001 $\mu$ F	5% 50V	C168	1-163-243-11	CERAMIC 47PF	5% 50V
C121	1-163-141-00	CERAMIC 0.001 $\mu$ F	5% 50V	C169	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C122	1-163-141-00	CERAMIC 0.001 $\mu$ F	5% 50V	C173	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C123	1-163-239-11	CERAMIC 33PF	5% 50V	C175	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C124	1-163-099-00	CERAMIC 18PF	5% 50V	C176	1-126-217-11	ELECT 15 $\mu$ F	20% 10V
C125	1-164-004-11	CERAMIC 0.1 $\mu$ F	10% 25V	C177	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C126	1-163-141-00	CERAMIC 0.001 $\mu$ F	5% 50V	C180	1-163-141-00	CERAMIC 0.001 $\mu$ F	5% 50V
C127	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C181	1-163-099-00	CERAMIC 18PF	5% 50V
C128	1-163-275-11	CERAMIC 0.001 $\mu$ F	5% 50V	C182	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C129	1-163-275-11	CERAMIC 0.001 $\mu$ F	5% 50V	C183	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C131	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C185	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C132	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C187	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C133	1-163-275-11	CERAMIC 0.001 $\mu$ F	5% 50V	C188	1-164-232-11	CERAMIC 0.01 $\mu$ F	10% 50V
C134	1-165-320-11	CERAMIC 0.47 $\mu$ F	10% 16V	C190	1-163-017-00	CERAMIC 0.0047 $\mu$ F	10% 50V
C135	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C191	1-163-137-00	CERAMIC 680PF	5% 50V
C136	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C192	1-164-232-11	CERAMIC 0.01 $\mu$ F	10% 50V
C137	1-164-182-11	CERAMIC 0.0033 $\mu$ F	10% 50V	C193	1-126-217-11	ELECT 15 $\mu$ F	20% 10V
C138	1-163-251-11	CERAMIC 100PF	5% 50V	C194	1-164-232-11	CERAMIC 0.01 $\mu$ F	10% 50V
C139	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C195	1-126-217-11	ELECT 15 $\mu$ F	20% 10V
C140	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C196	1-164-232-11	CERAMIC 0.01 $\mu$ F	10% 50V
C141	1-164-004-11	CERAMIC 0.1 $\mu$ F	10% 25V	C197	1-164-232-11	CERAMIC 0.01 $\mu$ F	10% 50V
C143	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C199	1-126-217-11	ELECT 15 $\mu$ F	20% 10V
C144	1-163-275-11	CERAMIC 0.001 $\mu$ F	5% 50V	C200	1-126-217-11	ELECT 15 $\mu$ F	20% 10V
C145	1-164-232-11	CERAMIC 0.01 $\mu$ F	10% 50V	C201	1-163-141-00	CERAMIC 0.001 $\mu$ F	5% 50V
C146	1-164-232-11	CERAMIC 0.01 $\mu$ F	10% 50V	C202	1-126-603-11	ELECT 4.7 $\mu$ F	20% 35V
C147	1-164-004-11	CERAMIC 0.1 $\mu$ F	10% 25V	C203	1-164-232-11	CERAMIC 0.01 $\mu$ F	10% 50V
C148	1-163-275-11	CERAMIC 0.001 $\mu$ F	5% 50V	C204	1-163-222-11	CERAMIC 5PF	50V
				C205	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
				C206	1-164-005-11	CERAMIC 0.47 $\mu$ F	25V
				C207	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
				C209	1-126-217-11	ELECT 15 $\mu$ F	20% 10V
				C210	1-164-005-11	CERAMIC 0.47 $\mu$ F	25V

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Ref.No	Part No.	Description			Remark	Ref.No	Part No.	Description			Remark
C211	1-164-005-11	CERAMIC	0.47uF		25V	C332	1-163-038-00	CERAMIC	0.1uF		25V
C212	1-163-038-00	CERAMIC	0.1uF		25V	C333	1-164-232-11	CERAMIC	0.01uF	10%	50V
C213	1-126-217-11	ELECT	15uF	20%	10V	C334	1-164-004-11	CERAMIC	0.1uF	10%	25V
C214	1-163-038-00	CERAMIC	0.1uF		25V	C335	1-126-217-11	ELECT	15uF	20%	10V
C215	1-164-005-11	CERAMIC	0.47uF		25V	C336	1-163-038-00	CERAMIC	0.1uF		25V
C216	1-126-193-11	ELECT	1uF	20%	50V	C337	1-163-227-11	CERAMIC	10PF		50V
C217	1-164-005-11	CERAMIC	0.47uF		25V	C338	1-164-004-11	CERAMIC	0.1uF	10%	25V
C218	1-163-235-11	CERAMIC	22PF	5%	50V	C339	1-126-217-11	ELECT	15uF	20%	10V
C220	1-164-005-11	CERAMIC	0.47uF		25V	C340	1-163-038-00	CERAMIC	0.1uF		25V
C221	1-164-005-11	CERAMIC	0.47uF		25V	C341	1-126-217-11	ELECT	15uF	20%	10V
C223	1-164-005-11	CERAMIC	0.47uF		25V	C342	1-163-038-00	CERAMIC	0.1uF		25V
C224	1-164-005-11	CERAMIC	0.47uF		25V	C343	1-126-217-11	ELECT	15uF	20%	10V
C225	1-126-217-11	ELECT	15uF	20%	10V	C344	1-163-038-00	CERAMIC	0.1uF		25V
C226	1-163-038-00	CERAMIC	0.1uF		25V	C345	1-126-217-11	ELECT	15uF	20%	10V
C227	1-164-005-11	CERAMIC	0.47uF		25V	C346	1-163-038-00	CERAMIC	0.1uF		25V
C228	1-163-251-11	CERAMIC	100PF	5%	50V	C347	1-163-227-11	CERAMIC	10PF		50V
C230	1-163-038-00	CERAMIC	0.1uF		25V	C348	1-164-004-11	CERAMIC	0.1uF	10%	25V
C250	1-163-127-00	CERAMIC	270PF	5%	50V	C349	1-128-065-11	ELECT	68uF	20%	10V
C251	1-163-110-00	CERAMIC	51PF	5%	50V	C350	1-163-038-00	CERAMIC	0.1uF		25V
C252	1-126-217-11	ELECT	15uF	20%	10V	C351	1-126-217-11	ELECT	15uF	20%	10V
C260	1-164-004-11	CERAMIC	0.1uF	10%	25V	C352	1-163-038-00	CERAMIC	0.1uF		25V
C261	1-163-097-00	CERAMIC	15PF	5%	50V	C353	1-163-809-11	CERAMIC	0.047uF	10%	25V
C262	1-163-141-00	CERAMIC	0.001uF	5%	50V	C354	1-163-037-11	CERAMIC	0.022uF	10%	25V
C263	1-163-141-00	CERAMIC	0.001uF	5%	50V	C355	1-163-038-00	CERAMIC	0.1uF		25V
C264			10P			C356	1-163-809-11	CERAMIC	0.047uF	10%	25V
C270	1-135-337-11	TANTAL	1uF	10%	6.3V	C357	1-135-091-00	CERAMIC	1uF	10%	16V
C271	1-126-217-11	ELECT	15uF	20%	10V	C358	1-164-004-11	CERAMIC	0.1uF	10%	25V
C281	1-126-207-11	ELECT	33uF	20%	4V	C359	1-126-193-11	ELECT	1uF	20%	50V
C282	1-126-217-11	ELECT	15uF	20%	10V	C360	1-163-106-00	CERAMIC	36PF	5%	50V
C285	1-164-005-11	CERAMIC	0.47uF		25V	C362	1-164-005-11	CERAMIC	0.47uF		25V
C286	1-164-005-11	CERAMIC	0.47uF		25V	C363	1-128-065-11	ELECT	68uF	20%	10V
C290	1-164-005-11	CERAMIC	0.47uF		25V	C364	1-163-038-00	CERAMIC	0.1uF		25V
C291	1-164-005-11	CERAMIC	0.47uF		25V	C366	1-163-113-00	CERAMIC	68PF	5%	50V
C295	1-164-004-11	CERAMIC	0.1uF	10%	25V	C367	1-126-217-11	ELECT	15uF	20%	10V
C301	1-126-217-11	ELECT	15uF	20%	10V	C368	1-163-038-00	CERAMIC	0.1uF		25V
C302	1-163-038-00	CERAMIC	0.1uF		25V	C369	1-126-217-11	ELECT	15uF	20%	10V
C303	1-163-077-00	CERAMIC	0.1uF	10%	25V	C370	1-163-038-00	CERAMIC	0.1uF		25V
C304	1-163-038-00	CERAMIC	0.1uF		25V	C371	1-164-004-11	CERAMIC	0.1uF	10%	25V
C305	1-163-038-00	CERAMIC	0.1uF		25V	C372	1-126-193-11	ELECT	1uF	20%	50V
C306	1-164-004-11	CERAMIC	0.1uF	10%	25V	C373	1-163-227-11	CERAMIC	10PF		50V
C307	1-126-217-11	ELECT	15uF	20%	10V	C374	1-164-004-11	CERAMIC	0.1uF	10%	25V
C308	1-164-346-11	CERAMIC	1uF		16V	C375	1-163-038-00	CERAMIC	0.1uF		25V
C309	1-126-217-11	ELECT	15uF	20%	10V	C376	1-164-232-11	CERAMIC	0.01uF	10%	50V
C310	1-163-038-00	CERAMIC	0.1uF		25V	C377	1-135-145-11	TANTAL	0.47uF	20%	25V
C311	1-163-038-00	CERAMIC	0.1uF		25V	C378	1-126-217-11	ELECT	15uF	20%	10V
C312	1-126-217-11	ELECT	15uF	20%	10V	C379	1-163-038-00	CERAMIC	0.1uF		25V
C313	1-163-038-00	CERAMIC	0.1uF		25V	C380	1-126-217-11	ELECT	15uF	20%	10V
C314	1-126-217-11	ELECT	15uF	20%	10V	C381	1-163-245-11	CERAMIC	56PF	5%	50V
C315	1-126-217-11	ELECT	15uF	20%	10V	C382	1-135-210-11	TANTAL	4.7uF	10%	10V
C316	1-126-217-11	ELECT	15uF	20%	10V	C383	1-163-038-00	CERAMIC	0.1uF		25V
C317	1-126-217-11	ELECT	15uF	20%	10V	C384	1-163-038-00	CERAMIC	0.1uF		25V
C318	1-126-217-11	ELECT	15uF	20%	10V	C385	1-163-038-00	CERAMIC	0.1uF		25V
C319	1-163-038-00	CERAMIC	0.1uF		25V	C386	1-164-232-11	CERAMIC	0.01uF	10%	50V
C320			1uF			C387	1-163-038-00	CERAMIC	0.1uF		25V
C321	1-126-217-11	ELECT	15uF	20%	10V	C388	1-126-217-11	ELECT	15uF	20%	10V
C322	1-126-217-11	ELECT	15uF	20%	10V	C389	1-163-038-00	CERAMIC	0.1uF		25V
C323	1-163-038-00	CERAMIC	0.1uF		25V	C390	1-163-038-00	CERAMIC	0.1uF		25V
C324	1-163-038-00	CERAMIC	0.1uF		25V	C391	1-163-229-11	CERAMIC	18PF	5%	50V
C325	1-163-117-00	CERAMIC	100PF	5%	50V	C393	1-163-038-00	CERAMIC	0.1uF		25V
C326	1-163-117-00	CERAMIC	100PF	5%	50V	C394	1-128-065-11	ELECT	68uF	20%	10V
C327	1-126-193-11	ELECT	1uF	20%	50V	C395	1-163-038-00	CERAMIC	0.1uF		25V
C328	1-163-141-00	CERAMIC	0.001uF	5%	50V	C396	1-126-217-11	ELECT	15uF	20%	10V
C329	1-164-004-11	CERAMIC	0.1uF	10%	25V	C397	1-164-232-11	CERAMIC	0.01uF	10%	50V
C330	1-164-005-11	CERAMIC	0.47uF		25V	C398	1-163-038-00	CERAMIC	0.1uF		25V
C331	1-164-004-11	CERAMIC	0.1uF	10%	25V	C399	1-164-004-11	CERAMIC	0.1uF	10%	25V



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Ref.No	Part No.	Description		Remark	Ref.No	Part No.	Description		Remark
C400	1-164-005-11	CERAMIC	0.47uF	25V	C901	1-163-239-11	CERAMIC 33PF 5% 50V		
C401	1-164-004-11	CERAMIC	0.1uF 10%	25V	C902	1-163-239-11	CERAMIC 33PF 5% 50V		
C402	1-163-038-00	CERAMIC	0.1uF	25V	C903	1-163-239-11	CERAMIC 33PF 5% 50V		
C404	1-163-038-00	CERAMIC	0.1uF	25V	C910	1-135-210-11	TANTAL 4.7uF 10% 10V		
C410	1-163-243-11	CERAMIC	47PF 5%	50V	C911	1-135-210-11	TANTAL 4.7uF 10% 10V		
C482			100P		C950	1-163-127-00	CERAMIC 270PF 5% 50V		
C501	1-126-217-11	ELECT	15uF 20%	10V	C951	1-163-239-11	CERAMIC 33PF 5% 50V		
C502	1-163-038-00	CERAMIC	0.1uF	25V	C990	1-126-217-11	ELECT 15uF 20% 10V		
C503	1-163-038-00	CERAMIC	0.1uF	25V			<CONNECTOR>		
C504	1-126-217-11	ELECT	15uF 20%	10V					
C505	1-163-239-11	CERAMIC	33PF 5%	50V	CN101	1-565-212-11	CONNECTOR, FPC (ZIF) 26P		
C506	1-163-239-11	CERAMIC	33PF 5%	50V	CN102	1-565-212-11	CONNECTOR, FPC (ZIF) 26P		
C507	1-163-038-00	CERAMIC	0.1uF	25V	CN105	*1-560-892-00	PIN, CONNECTOR 4P		
C508	1-163-038-00	CERAMIC	0.1uF	25V	CN110	1-506-472-11	PIN, CONNECTOR 7P		
C509	1-126-217-11	ELECT	15uF 20%	10V	CN502	1-506-471-11	PIN, CONNECTOR 6P		
C512	1-163-038-00	CERAMIC	0.1uF	25V	CT101	1-141-311-11	CAP, VAR, TRIMMER (CHIP)		
C513	1-164-005-11	CERAMIC	0.47uF	25V	CT102	1-141-311-11	CAP, VAR, TRIMMER (CHIP)		
C514	1-163-038-00	CERAMIC	0.1uF	25V			<DIODE>		
C515	1-163-038-00	CERAMIC	0.1uF	25V					
C516	1-126-217-11	ELECT	15uF 20%	10V	D101	8-713-300-88	DIODE 1T33C-T8-04		
C517	1-163-038-00	CERAMIC	0.1uF	25V	D109	8-719-820-41	DIODE 1SS302		
C518	1-164-232-11	CERAMIC	0.01uF 10%	50V	D110	8-719-820-41	DIODE 1SS302		
C519	1-164-232-11	CERAMIC	0.01uF 10%	50V	D120	8-713-300-88	DIODE 1T33C-T8-04		
C520	1-163-809-11	CERAMIC	0.047uF 10%	25V	D125	8-719-024-82	DIODE 1SS300-TE85R		
C521	1-163-809-11	CERAMIC	0.047uF 10%	25V					
C522	1-163-809-11	CERAMIC	0.047uF 10%	25V	D126	8-719-421-27	DIODE MA728-TX		
C523	1-164-232-11	CERAMIC	0.01uF 10%	50V	D301	8-719-820-41	DIODE 1SS302		
C524	1-164-005-11	CERAMIC	0.47uF	25V	D302	8-719-820-41	DIODE 1SS302		
C525	1-126-217-11	ELECT	15uF 20%	10V	D310	8-719-820-41	DIODE 1SS302		
C526	1-126-217-11	ELECT	15uF 20%	10V	D311	8-719-820-41	DIODE 1SS302		
C527	1-163-038-00	CERAMIC	0.1uF	25V	D312	8-719-820-41	DIODE 1SS302		
C528	1-163-038-00	CERAMIC	0.1uF	25V	D313	8-719-820-41	DIODE 1SS302		
C529	1-163-038-00	CERAMIC	0.1uF	25V	D503	8-719-820-41	DIODE 1SS302		
C530	1-126-217-11	ELECT	15uF 20%	10V	D508	8-719-820-41	DIODE 1SS302		
C531	1-163-038-00	CERAMIC	0.1uF	25V	D509	8-719-820-41	DIODE 1SS302		
C532	1-126-217-11	ELECT	15uF 20%	10V	D910	8-719-025-18	DIODE 02CZ2.0-TE85L		
C533	1-163-038-00	CERAMIC	0.1uF	25V	D911	8-719-025-18	DIODE 02CZ2.0-TE85L		
C534	1-126-217-11	ELECT	15uF 20%	10V	D912	8-719-025-18	DIODE 02CZ2.0-TE85L		
C535	1-163-038-00	CERAMIC	0.1uF	25V			<DELAY LINE>		
C536	1-164-005-11	CERAMIC	0.47uF	25V	DL301	1-406-516-11	DELAY LINE, LC (140NS) (EQ)		
C537	1-164-005-11	CERAMIC	0.47uF	25V	DL302	1-239-565-11	FILTER, LOW PASS		
C538	1-126-217-11	ELECT	15uF 20%	10V	DL303	1-403-694-11	COIL		
C539	1-164-232-11	CERAMIC	0.01uF 10%	50V			<FERRITE, BEAD>		
C540	1-164-232-11	CERAMIC	0.01uF 10%	50V					
C541	1-164-232-11	CERAMIC	0.01uF 10%	50V	FB107	1-412-390-21	INDUCTOR CHIP OUH		
C543	1-163-235-11	CERAMIC	22PF 5%	50V	FB108	1-412-390-21	INDUCTOR CHIP OUH		
C544	1-164-004-11	CERAMIC	0.1uF 10%	25V	FB109	1-412-390-21	INDUCTOR CHIP OUH		
C545	1-126-217-11	ELECT	15uF 20%	10V	FB112	1-412-390-21	INDUCTOR CHIP OUH		
C546	1-163-038-00	CERAMIC	0.1uF	25V	FB121	1-412-390-21	INDUCTOR CHIP OUH		
C547	1-163-038-00	CERAMIC	0.1uF	25V					
C570	1-163-038-00	CERAMIC	0.1uF	25V	FB122	1-412-390-21	INDUCTOR CHIP OUH		
C571	1-126-217-11	ELECT	15uF 20%	10V	FB123	1-412-390-21	INDUCTOR CHIP OUH		
C572	1-126-217-11	ELECT	15uF 20%	10V	FB304	1-412-390-21	INDUCTOR CHIP OUH		
C601	1-126-217-11	ELECT	15uF 20%	10V	FB305	1-412-390-21	INDUCTOR CHIP OUH		
C602	1-164-232-11	CERAMIC	0.01uF 10%	50V	FB306	1-412-390-21	INDUCTOR CHIP OUH		
C610	1-126-217-11	ELECT	15uF 20%	10V	FB307	1-412-390-21	INDUCTOR CHIP OUH		
C611	1-126-217-11	ELECT	15uF 20%	10V	FB308	1-412-390-21	INDUCTOR CHIP OUH		
C620	1-163-038-00	CERAMIC	0.1uF	25V	FB309	1-412-390-21	INDUCTOR CHIP OUH		
C621	1-163-038-00	CERAMIC	0.1uF	25V	FB310	1-412-390-21	INDUCTOR CHIP OUH		
C622	1-126-217-11	ELECT	15uF 20%	10V	FB311	1-412-390-21	INDUCTOR CHIP OUH		
C623	1-163-038-00	CERAMIC	0.1uF	25V	FB312	1-412-390-21	INDUCTOR CHIP OUH		
C624	1-164-232-11	CERAMIC	0.01uF 10%	50V	FB313	1-412-390-21	INDUCTOR CHIP OUH		
C650	1-128-065-11	ELECT	68uF 20%	10V	FB314	1-412-390-21	INDUCTOR CHIP OUH		
C651	1-128-065-11	ELECT	68uF 20%	10V	FB315	1-412-390-21	INDUCTOR CHIP OUH		
C801	1-164-004-11	CERAMIC	0.1uF 10%	25V	FB316	1-412-390-21	INDUCTOR CHIP OUH		

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
FB317	1-412-390-21	INDUCTOR CHIP OUH		IC113	8-759-157-22	IC PQ05TZIU	
FB318	1-412-390-21	INDUCTOR CHIP OUH		IC114	8-759-157-17	IC PQ05SZIU	
FB319	1-412-390-21	INDUCTOR CHIP OUH		IC119	8-759-097-87	IC MB621948	
FB320	1-412-390-21	INDUCTOR CHIP OUH		IC121	8-752-352-21	IC CXD2024Q	
FB321	1-412-390-21	INDUCTOR CHIP OUH		IC122	8-759-710-86	IC NJM2233BM	
FB322	1-412-390-21	INDUCTOR CHIP OUH		IC123	8-759-710-07	IC NJM2234M	
FB323	1-412-390-21	INDUCTOR CHIP OUH		IC125	8-759-710-86	IC NJM2233BM	
FB324	1-412-390-21	INDUCTOR CHIP OUH		IC126	8-759-242-64	IC TC4W53F	
FB325	1-412-390-21	INDUCTOR CHIP OUH		IC128	8-759-242-72	IC TC7W00F	
FB327	1-412-390-21	INDUCTOR CHIP OUH		IC130	8-752-341-58	IC CXD1217Q	
FB328	1-412-390-21	INDUCTOR CHIP OUH		IC301	8-752-054-80	IC CXA1521M	
FB329	1-412-390-21	INDUCTOR CHIP OUH		IC302	8-759-011-65	IC MC74HC4053F	
FB330	1-412-390-21	INDUCTOR CHIP OUH		IC303	8-759-998-96	IC LM324D	
FB331	1-412-390-21	INDUCTOR CHIP OUH		IC304	8-759-998-96	IC LM324D	
FB332	1-412-390-21	INDUCTOR CHIP OUH		IC306	8-759-105-49	IC UPC319G2	
FB334	1-412-390-21	INDUCTOR CHIP OUH		IC307	8-759-635-27	IC M62352GP	
FB335	1-412-390-21	INDUCTOR CHIP OUH		IC308	8-759-635-27	IC M62352GP	
FB336	1-412-390-21	INDUCTOR CHIP OUH		IC309	8-759-044-78	IC AK6420F	
FB337	1-412-390-21	INDUCTOR CHIP OUH		IC310	8-752-340-25	IC CXL5505M	
FB338	1-412-390-21	INDUCTOR CHIP OUH		IC311	8-752-058-96	IC CXA1585Q	
FB339	1-412-390-21	INDUCTOR CHIP OUH		IC312	8-759-030-61	IC TL431CM	
FB340	1-412-390-21	INDUCTOR CHIP OUH		IC313	8-759-745-64	IC NJM4560M	
FB343	1-412-390-21	INDUCTOR CHIP OUH		IC314	8-759-998-96	IC LM324D	
FB344	1-412-390-21	INDUCTOR CHIP OUH		IC320	8-759-745-64	IC NJM4560M	
FB345	1-412-390-21	INDUCTOR CHIP OUH		IC501	8-759-011-65	IC MC74HC4053F	
FB346	1-412-390-21	INDUCTOR CHIP OUH		IC504	8-759-248-84	IC M50555-216FP-TE2	
FB347	1-412-390-21	INDUCTOR CHIP OUH		IC506	8-752-033-07	IC CXA1145M	
FB348	1-412-390-21	INDUCTOR CHIP OUH		IC507	8-752-053-21	IC CXA1211M	
FB349	1-412-390-21	INDUCTOR CHIP OUH		IC508	8-759-710-86	IC NJM2233BM	
FB510	1-412-390-21	INDUCTOR CHIP OUH		IC511	8-752-053-21	IC CXA1211M	
FB511	1-412-390-21	INDUCTOR CHIP OUH		IC601	8-759-710-07	IC NJM2234M	
FB512	1-412-390-21	INDUCTOR CHIP OUH		IC602	8-759-710-86	IC NJM2233BM	
FB920	1-412-390-21	INDUCTOR CHIP OUH		IC603	8-759-710-86	IC NJM2233BM	
FB921	1-412-390-21	INDUCTOR CHIP OUH				<JACK>	
FB922	1-412-390-21	INDUCTOR CHIP OUH		J101	1-565-276-21	JACK, ULTRA SMALL 1P	
		<FILTER>				<INDUCTOR>	
FL102	1-236-388-11	FILTER, EMI		L101	1-410-389-31	INDUCTOR CHIP 47UH	
FL103	1-236-388-11	FILTER, EMI		L102	1-410-388-31	INDUCTOR CHIP 39UH	
FL104	1-236-388-11	FILTER, EMI		L103	1-412-137-11	INDUCTOR 10UH	
FL105	1-236-388-11	FILTER, EMI		L110	1-410-200-31	INDUCTOR CHIP 4.7UH	
FL106	1-236-388-11	FILTER, EMI		L120	1-410-385-11	INDUCTOR CHIP 22UH	
FL107	1-236-388-11	FILTER, EMI		L130	1-410-385-11	INDUCTOR CHIP 22UH	
FL201	1-239-839-11	FILTER, LOW PASS		L140	1-410-385-11	INDUCTOR CHIP 22UH	
FL202	1-236-265-11	FILTER, BAND PASS		L141	1-410-385-11	INDUCTOR CHIP 22UH	
FL203	1-239-564-11	FILTER, LOW PASS		L301	1-410-377-31	INDUCTOR CHIP 4.7UH	
FL301	1-239-564-11	FILTER, LOW PASS		L302	1-410-389-31	INDUCTOR CHIP 47UH	
FL304	1-406-515-11	DELAY LINE, LC		L303	1-410-388-31	INDUCTOR CHIP 39UH	
FL501	1-239-563-11	FILTER, LOW PASS		L350	1-410-377-31	INDUCTOR CHIP 4.7UH	
FL502	1-239-563-11	FILTER, LOW PASS		L501	1-410-384-31	INDUCTOR CHIP 18UH	
FL503	1-239-563-11	FILTER, LOW PASS		L600	1-424-090-11	COIL, LINE FILTER	
FL504	1-239-564-11	FILTER, LOW PASS		L601	1-424-090-11	COIL, LINE FILTER	
FL505	1-236-265-11	FILTER, BAND PASS		L602	1-424-090-11	COIL, LINE FILTER	
		<IC>		L900	1-424-090-11	COIL, LINE FILTER	
IC102	8-759-105-49	IC UPC319G2		L901	1-410-730-11	INDUCTOR 0.12UH	
IC103	8-759-100-97	IC UPC339G2		L902	1-410-730-11	INDUCTOR 0.12UH	
IC104	8-759-996-43	IC RC4558PS		L903	1-410-730-11	INDUCTOR 0.12UH	
IC106	8-759-710-12	IC NJM2230M					
IC107	8-752-326-08	IC CXD1159Q		L904	1-412-188-11	INDUCTOR 22UH	
IC108	8-759-907-81	IC SN74LS221NS		L905	1-412-188-11	INDUCTOR 22UH	
IC109	8-759-242-70	IC TC7WU04F					
IC110	8-759-907-81	IC SN74LS221NS					
IC111	8-759-981-48	IC TL082M					
IC112	8-759-011-65	IC MC74HC4053F					

**VA-76(B)**

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
		<FILTER>		Q505	8-729-010-75	TRANSISTOR MSC4116-B/C	
				Q506	8-729-010-75	TRANSISTOR MSC4116-B/C	
LF101	1-424-090-11	COIL, LINE FILTER		Q507	8-729-232-66	TRANSISTOR 2SA1618Y	
LF102	1-424-090-11	COIL, LINE FILTER		Q508	8-729-010-75	TRANSISTOR MSC4116-B/C	
LF106	1-424-090-11	COIL, LINE FILTER		Q509	8-729-232-66	TRANSISTOR 2SA1618Y	
		<TRANSISTOR>		Q510	8-729-232-66	TRANSISTOR 2SA1618Y	
				Q511	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q101	8-729-010-60	TRANSISTOR MSA1586-BC		Q512	8-729-010-60	TRANSISTOR MSA1586-BC	
Q102	8-729-010-60	TRANSISTOR MSA1586-BC		Q513	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q103	8-729-010-75	TRANSISTOR MSC4116-B/C		Q514	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q104	8-729-010-75	TRANSISTOR MSC4116-B/C		Q515	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q105	8-729-010-75	TRANSISTOR MSC4116-B/C		Q516	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q106	8-729-120-28	TRANSISTOR 2SC1623-L5L6		Q517	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q108	8-729-010-75	TRANSISTOR MSC4116-B/C		Q518	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q109	8-729-010-75	TRANSISTOR MSC4116-B/C		Q519	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q110	8-729-010-75	TRANSISTOR MSC4116-B/C		Q520	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q111	8-729-010-75	TRANSISTOR MSC4116-B/C		Q521	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q112	8-729-010-60	TRANSISTOR MSA1586-BC		Q522	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q113	8-729-402-87	TRANSISTOR XN2401		Q523	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q116	8-729-010-75	TRANSISTOR MSC4116-B/C		Q525	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q117	8-729-010-75	TRANSISTOR MSC4116-B/C		Q526	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q118	8-729-402-84	TRANSISTOR XN4601		Q527	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q119	8-729-010-75	TRANSISTOR MSC4116-B/C		Q528	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q120	8-729-010-75	TRANSISTOR MSC4116-B/C		Q529	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q121	8-729-010-75	TRANSISTOR MSC4116-B/C		Q530	8-729-010-60	TRANSISTOR MSA1586-BC	
Q122	8-729-010-75	TRANSISTOR MSC4116-B/C		Q531	8-729-010-60	TRANSISTOR MSA1586-BC	
Q123	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L		Q532	8-729-010-60	TRANSISTOR MSA1586-BC	
Q124	8-729-402-84	TRANSISTOR XN4601		Q540	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q125	8-729-010-75	TRANSISTOR MSC4116-B/C		Q601	8-729-013-88	TRANSISTOR RN1302-TE85L	
Q126	8-729-402-84	TRANSISTOR XN4601		Q602	8-729-013-88	TRANSISTOR RN1302-TE85L	
Q170	8-729-010-60	TRANSISTOR MSA1586-BC		Q901	8-729-010-60	TRANSISTOR MSA1586-BC	
Q171	8-729-013-88	TRANSISTOR RN1302-TE85L		Q902	8-729-010-75	TRANSISTOR MSC4116-B/C	
Q301	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L		Q910	8-729-010-60	TRANSISTOR MSA1586-BC	
Q302	8-729-010-75	TRANSISTOR MSC4116-B/C				<RESISTOR>	
Q303	8-729-402-84	TRANSISTOR XN4601		R101	1-216-051-00	METAL 1.2K 5%	1/10W
Q304	8-729-402-84	TRANSISTOR XN4601		R102	1-216-053-00	METAL 1.5K 5%	1/10W
Q305	8-729-010-75	TRANSISTOR MSC4116-B/C		R103	1-216-053-00	METAL 1.5K 5%	1/10W
Q306	8-729-010-60	TRANSISTOR MSA1586-BC		R105	1-216-057-00	METAL 2.2K 5%	1/10W
Q307	8-729-232-66	TRANSISTOR 2SA1618Y		R106	1-216-057-00	METAL 2.2K 5%	1/10W
Q308	8-729-010-75	TRANSISTOR MSC4116-B/C		R107	1-216-065-00	METAL 4.7K 5%	1/10W
Q309	8-729-402-81	TRANSISTOR XN4501		R108	1-216-057-00	METAL 2.2K 5%	1/10W
Q310	8-729-010-60	TRANSISTOR MSA1586-BC		R109	1-216-057-00	METAL 2.2K 5%	1/10W
Q311	8-729-402-81	TRANSISTOR XN4501		R110	1-216-053-00	METAL 1.5K 5%	1/10W
Q312	8-729-010-75	TRANSISTOR MSC4116-B/C		R111	1-216-075-00	METAL 12K 5%	1/10W
Q316	8-729-010-75	TRANSISTOR MSC4116-B/C		R112	1-216-001-00	METAL 10 5%	1/10W
Q320	8-729-010-75	TRANSISTOR MSC4116-B/C		R113	1-216-057-00	METAL 2.2K 5%	1/10W
Q321	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L		R114	1-216-065-00	METAL 4.7K 5%	1/10W
Q322	8-729-010-75	TRANSISTOR MSC4116-B/C		R115	1-216-057-00	METAL 2.2K 5%	1/10W
Q323	8-729-010-75	TRANSISTOR MSC4116-B/C		R116	1-216-081-00	METAL 22K 5%	1/10W
Q324	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L		R117	1-216-049-00	METAL 1K 5%	1/10W
Q326	8-729-010-75	TRANSISTOR MSC4116-B/C		R118	1-216-075-00	METAL 12K 5%	1/10W
Q328	8-729-010-75	TRANSISTOR MSC4116-B/C		R119	1-216-073-00	METAL 10K 5%	1/10W
Q329	8-729-010-75	TRANSISTOR MSC4116-B/C		R120	1-216-075-00	METAL 12K 5%	1/10W
Q330	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L		R121	1-216-035-00	METAL 270 5%	1/10W
Q331	8-729-010-75	TRANSISTOR MSC4116-B/C		R122	1-216-295-00	METAL 0 5%	1/10W
Q334	8-729-010-75	TRANSISTOR MSC4116-B/C		R123	1-216-049-00	METAL 1K 5%	1/10W
Q335	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L		R124	1-216-065-00	METAL 4.7K 5%	1/10W
Q336	8-729-010-60	TRANSISTOR MSA1586-BC		R125	1-216-033-00	METAL 220 5%	1/10W
Q350	8-729-010-75	TRANSISTOR MSC4116-B/C		R127	1-216-037-00	METAL 330 5%	1/10W
Q360	8-729-402-84	TRANSISTOR XN4601		R128	1-216-085-00	METAL 33K 5%	1/10W
Q361	8-729-010-75	TRANSISTOR MSC4116-B/C		R129	1-216-069-00	METAL 6.8K 5%	1/10W
Q501	8-729-010-75	TRANSISTOR MSC4116-B/C		R130	1-216-083-00	METAL 27K 5%	1/10W
Q502	8-729-010-75	TRANSISTOR MSC4116-B/C		R131	1-216-073-00	METAL 10K 5%	1/10W
Q503	8-729-010-60	TRANSISTOR MSA1586-BC					
Q504	8-729-010-60	TRANSISTOR MSA1586-BC					

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R132	1-216-073-00	METAL	10K 5% 1/10W	R216	1-216-041-00	METAL	470 5% 1/10W
R133	1-216-097-00	METAL	100K 5% 1/10W	R217	1-216-032-00	METAL	200 5% 1/10W
R134	1-216-049-00	METAL	1K 5% 1/10W	R218	1-216-053-00	METAL	1.5K 5% 1/10W
R135	1-216-033-00	METAL	220 5% 1/10W	R219	1-216-053-00	METAL	1.5K 5% 1/10W
R137	1-216-053-00	METAL	1.5K 5% 1/10W	R220	1-216-049-00	METAL	1K 5% 1/10W
R138	1-216-051-00	METAL	1.2K 5% 1/10W	R221	1-216-049-00	METAL	1K 5% 1/10W
R139	1-216-053-00	METAL	1.5K 5% 1/10W	R222	1-216-073-00	METAL	10K 5% 1/10W
R140	1-216-073-00	METAL	10K 5% 1/10W	R223	1-216-041-00	METAL	470 5% 1/10W
R141	1-216-069-00	METAL	6.8K 5% 1/10W	R224	1-216-049-00	METAL	1K 5% 1/10W
R142	1-216-081-00	METAL	22K 5% 1/10W	R225	1-216-053-00	METAL	1.5K 5% 1/10W
R143	1-216-081-00	METAL	22K 5% 1/10W	R227	1-216-053-00	METAL	1.5K 5% 1/10W
R144	1-216-105-00	METAL	220K 5% 1/10W	R228	1-216-049-00	METAL	1K 5% 1/10W
R145	1-216-067-00	METAL	5.6K 5% 1/10W	R229	1-216-053-00	METAL	1.5K 5% 1/10W
R146	1-216-055-00	METAL	1.8K 5% 1/10W	R230	1-216-049-00	METAL	1K 5% 1/10W
R147	1-216-057-00	METAL	2.2K 5% 1/10W	R231	1-216-051-00	METAL	1.2K 5% 1/10W
R148	1-216-057-00	METAL	2.2K 5% 1/10W	R232	1-216-041-00	METAL	470 5% 1/10W
R149	1-216-063-00	METAL	3.9K 5% 1/10W	R233	1-216-061-00	METAL	3.3K 5% 1/10W
R150	1-216-057-00	METAL	2.2K 5% 1/10W	R234	1-216-295-00	METAL	0 5% 1/10W
R151	1-216-043-00	METAL	560 5% 1/10W	R235	1-216-053-00	METAL	1.5K 5% 1/10W
R152	1-216-031-00	METAL	180 5% 1/10W	R236	1-216-053-00	METAL	1.5K 5% 1/10W
R153	1-216-043-00	METAL	560 5% 1/10W	R237	1-216-049-00	METAL	1K 5% 1/10W
R154	1-216-057-00	METAL	2.2K 5% 1/10W	R238	1-216-049-00	METAL	1K 5% 1/10W
R155	1-216-093-00	METAL	68K 5% 1/10W	R239	1-216-033-00	METAL	220 5% 1/10W
R156	1-216-021-00	METAL	68 5% 1/10W	R240	1-216-061-00	METAL	3.3K 5% 1/10W
R157	1-216-057-00	METAL	2.2K 5% 1/10W	R241	1-216-053-00	METAL	1.5K 5% 1/10W
R158	1-216-061-00	METAL	3.3K 5% 1/10W	R245	1-216-105-00	METAL	220K 5% 1/10W
R159	1-216-057-00	METAL	2.2K 5% 1/10W	R252	1-216-295-00	METAL	0 5% 1/10W
R160	1-216-065-00	METAL	4.7K 5% 1/10W	R255	1-216-041-00	METAL	470 5% 1/10W
R161	1-216-069-00	METAL	6.8K 5% 1/10W	R260	1-216-057-00	METAL	2.2K 5% 1/10W
R162	1-216-665-11	METAL	3.9K 0.50% 1/10W	R261	1-216-093-00	METAL	68K 5% 1/10W
R163	1-216-053-00	METAL	1.5K 5% 1/10W	R262	1-216-037-00	METAL	330 5% 1/10W
R164	1-216-073-00	METAL	10K 5% 1/10W	R263	1-216-073-00	METAL	10K 5% 1/10W
R165	1-216-065-00	METAL	4.7K 5% 1/10W	R265	1-216-073-00	METAL	10K 5% 1/10W
R166	1-216-047-00	METAL	820 5% 1/10W	R266	1-216-073-00	METAL	10K 5% 1/10W
R167	1-216-027-00	METAL	120 5% 1/10W	R268	1-216-037-00	METAL	330 5% 1/10W
R168	1-216-073-00	METAL	10K 5% 1/10W	R269	1-216-295-00	METAL	0 5% 1/10W
R169	1-216-069-00	METAL	6.8K 5% 1/10W	R272	1-216-065-00	METAL	4.7K 5% 1/10W
R171	1-216-065-00	METAL	4.7K 5% 1/10W	R273	1-216-105-00	METAL	220K 5% 1/10W
R172	1-216-057-00	METAL	2.2K 5% 1/10W	R274	1-216-073-00	METAL	10K 5% 1/10W
R175	1-216-049-00	METAL	1K 5% 1/10W	R280	1-216-061-00	METAL	3.3K 5% 1/10W
R176	1-216-041-00	METAL	470 5% 1/10W	R282	1-216-032-00	METAL	200 5% 1/10W
R177	1-216-049-00	METAL	1K 5% 1/10W	R283	1-216-053-00	METAL	1.5K 5% 1/10W
R178	1-216-049-00	METAL	1K 5% 1/10W	R284	1-216-689-11	METAL	39K 5% 1/10W
R180	1-216-049-00	METAL	1K 5% 1/10W	R285	1-216-053-00	METAL	1.5K 5% 1/10W
R182	1-216-049-00	METAL	1K 5% 1/10W	R288	1-216-043-00	METAL	560 5% 1/10W
R185	1-216-061-00	METAL	3.3K 5% 1/10W	R289	1-216-057-00	METAL	2.2K 5% 1/10W
R186	1-216-053-00	METAL	1.5K 5% 1/10W	R290	1-216-045-00	METAL	680 5% 1/10W
R187	1-216-033-00	METAL	220 5% 1/10W	R291	1-216-045-00	METAL	680 5% 1/10W
R190	1-216-057-00	METAL	2.2K 5% 1/10W	R292	1-216-031-00	METAL	180 5% 1/10W
R191	1-216-057-00	METAL	2.2K 5% 1/10W	R293	1-216-057-00	METAL	2.2K 5% 1/10W
R192	1-216-049-00	METAL	1K 5% 1/10W	R301	1-216-053-00	METAL	1.5K 5% 1/10W
R193	1-216-295-00	METAL	0 5% 1/10W	R302	1-216-053-00	METAL	1.5K 5% 1/10W
R195	1-216-049-00	METAL	1K 5% 1/10W	R303	1-216-053-00	METAL	1.5K 5% 1/10W
R196	1-216-049-00	METAL	1K 5% 1/10W	R304	1-216-033-00	METAL	220 5% 1/10W
R197	1-216-049-00	METAL	1K 5% 1/10W	R305	1-216-033-00	METAL	220 5% 1/10W
R198	1-216-049-00	METAL	1K 5% 1/10W	R306	1-216-057-00	METAL	2.2K 5% 1/10W
R208	1-216-061-00	METAL	3.3K 5% 1/10W	R307	1-216-057-00	METAL	2.2K 5% 1/10W
R209	1-216-039-00	METAL	390 5% 1/10W	R308	1-216-061-00	METAL	3.3K 5% 1/10W
R210	1-216-041-00	METAL	470 5% 1/10W	R309	1-216-065-00	METAL	4.7K 5% 1/10W
R211	1-216-057-00	METAL	2.2K 5% 1/10W	R310	1-216-065-00	METAL	4.7K 5% 1/10W
R212	1-216-073-00	METAL	10K 5% 1/10W	R311	1-216-061-00	METAL	3.3K 5% 1/10W
R213	1-216-083-00	METAL	27K 5% 1/10W	R312	1-216-073-00	METAL	10K 5% 1/10W
R214	1-216-057-00	METAL	2.2K 5% 1/10W	R313	1-216-033-00	METAL	220 5% 1/10W

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<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>			<u>Remark</u>	<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>			<u>Remark</u>
R314	1-216-033-00	METAL	220	5%	1/10W	R387	1-216-045-00	METAL	680	5%	1/10W
R315	1-216-089-91	METAL	47K	5%	1/10W	R389	1-216-045-00	METAL	680	5%	1/10W
R316	1-216-033-00	METAL	220	5%	1/10W	R391	1-216-049-00	METAL	1K	5%	1/10W
R317	1-216-033-00	METAL	220	5%	1/10W	R392	1-216-095-00	METAL	82K	5%	1/10W
R318	1-216-033-00	METAL	220	5%	1/10W	R393	1-216-049-00	METAL	1K	5%	1/10W
R319	1-216-073-00	METAL	10K	5%	1/10W	R394	1-216-057-00	METAL	2.2K	5%	1/10W
R320	1-216-033-00	METAL	220	5%	1/10W	R395	1-216-053-00	METAL	1.5K	5%	1/10W
R321	1-216-033-00	METAL	220	5%	1/10W	R397	1-216-049-00	METAL	1K	5%	1/10W
R322	1-216-073-00	METAL	10K	5%	1/10W	R399	1-216-049-00	METAL	1K	5%	1/10W
R323	1-216-073-00	METAL	10K	5%	1/10W	R400	1-216-033-00	METAL	220	5%	1/10W
R324	1-216-033-00	METAL	220	5%	1/10W	R401	1-216-053-00	METAL	1.5K	5%	1/10W
R325	1-216-073-00	METAL	10K	5%	1/10W	R402	1-216-053-00	METAL	1.5K	5%	1/10W
R326	1-216-057-00	METAL	2.2K	5%	1/10W	R403	1-216-295-00	METAL	0	5%	1/10W
R327	1-216-077-00	METAL	15K	5%	1/10W	R405	1-216-015-00	METAL	39	5%	1/10W
R328	1-216-033-00	METAL	220	5%	1/10W	R406	1-216-033-00	METAL	220	5%	1/10W
R329	1-216-033-00	METAL	220	5%	1/10W	R407	1-216-049-00	METAL	1K	5%	1/10W
R330	1-216-057-00	METAL	2.2K	5%	1/10W	R408	1-216-057-00	METAL	2.2K	5%	1/10W
R331	1-216-033-00	METAL	220	5%	1/10W	R409	1-216-053-00	METAL	1.5K	5%	1/10W
R332	1-216-053-00	METAL	1.5K	5%	1/10W	R410	1-216-049-00	METAL	1K	5%	1/10W
R333	1-216-057-00	METAL	2.2K	5%	1/10W	R413	1-216-049-00	METAL	1K	5%	1/10W
R334	1-216-053-00	METAL	1.5K	5%	1/10W	R414	1-216-033-00	METAL	220	5%	1/10W
R335	1-216-053-00	METAL	1.5K	5%	1/10W	R415	1-216-114-00	METAL	510K	5%	1/10W
R336	1-216-033-00	METAL	220	5%	1/10W	R416	1-216-053-00	METAL	1.5K	5%	1/10W
R337	1-216-073-00	METAL	10K	5%	1/10W	R417	1-216-053-00	METAL	1.5K	5%	1/10W
R338	1-216-033-00	METAL	220	5%	1/10W	R418	1-216-049-00	METAL	1K	5%	1/10W
R339	1-216-073-00	METAL	10K	5%	1/10W	R419	1-216-051-00	METAL	1.2K	5%	1/10W
R340	1-216-057-00	METAL	2.2K	5%	1/10W	R420	1-216-658-11	METAL	2K	0.50%	1/10W
R341	1-216-057-00	METAL	2.2K	5%	1/10W	R422	1-216-041-00	METAL	470	5%	1/10W
R342	1-216-045-00	METAL	680	5%	1/10W	R424	1-216-033-00	METAL	220	5%	1/10W
R343	1-216-061-00	METAL	3.3K	5%	1/10W	R425	1-216-061-00	METAL	3.3K	5%	1/10W
R344	1-216-057-00	METAL	2.2K	5%	1/10W	R430	1-216-057-00	METAL	2.2K	5%	1/10W
R345	1-216-057-00	METAL	2.2K	5%	1/10W	R432	1-216-057-00	METAL	2.2K	5%	1/10W
R346	1-216-117-00	METAL	680K	5%	1/10W	R433	1-216-053-00	METAL	1.5K	5%	1/10W
R347	1-216-073-00	METAL	10K	5%	1/10W	R434	1-216-075-00	METAL	12K	5%	1/10W
R348	1-216-053-00	METAL	1.5K	5%	1/10W	R435	1-216-053-00	METAL	1.5K	5%	1/10W
R349	1-216-065-00	METAL	4.7K	5%	1/10W	R436	1-216-295-00	METAL	0	5%	1/10W
R350	1-216-065-00	METAL	4.7K	5%	1/10W	R437	1-216-049-00	METAL	1K	5%	1/10W
R351	1-216-041-00	METAL	470	5%	1/10W	R439	1-216-069-00	METAL	6.8K	5%	1/10W
R352	1-216-071-00	METAL	8.2K	5%	1/10W	R440	1-216-295-00	METAL	0	5%	1/10W
R353	1-216-089-91	METAL	47K	5%	1/10W	R441	1-216-049-00	METAL	1K	5%	1/10W
R354	1-216-073-00	METAL	10K	5%	1/10W	R442	1-216-033-00	METAL	220	5%	1/10W
R355	1-216-089-91	METAL	47K	5%	1/10W	R443	1-216-103-91	METAL	180K	5%	1/10W
R356	1-216-073-00	METAL	10K	5%	1/10W	R444	1-216-033-00	METAL	220	5%	1/10W
R357	1-216-057-00	METAL	2.2K	5%	1/10W	R445	1-216-025-00	METAL	100	5%	1/10W
R358	1-216-045-00	METAL	680	5%	1/10W	R446	1-216-033-00	METAL	220	5%	1/10W
R360	1-216-057-00	METAL	2.2K	5%	1/10W	R447	1-216-053-00	METAL	1.5K	5%	1/10W
R363	1-216-057-00	METAL	2.2K	5%	1/10W	R448	1-216-053-00	METAL	1.5K	5%	1/10W
R365	1-216-073-00	METAL	10K	5%	1/10W	R449	1-216-053-00	METAL	1.5K	5%	1/10W
R366	1-216-085-00	METAL	33K	5%	1/10W	R450	1-216-049-00	METAL	1K	5%	1/10W
R367	1-216-047-00	METAL	820	5%	1/10W	R451	1-216-049-00	METAL	1K	5%	1/10W
R368	1-216-049-00	METAL	1K	5%	1/10W	R452	1-216-049-00	METAL	1K	5%	1/10W
R369	1-216-049-00	METAL	1K	5%	1/10W	R453	1-216-033-00	METAL	220	5%	1/10W
R370	1-216-041-00	METAL	470	5%	1/10W	R454	1-216-295-00	METAL	0	5%	1/10W
R371	1-216-057-00	METAL	2.2K	5%	1/10W	R455	1-216-081-00	METAL	22K	5%	1/10W
R372	1-216-041-00	METAL	470	5%	1/10W	R456	1-216-081-00	METAL	22K	5%	1/10W
R376	1-216-053-00	METAL	1.5K	5%	1/10W	R457	1-216-081-00	METAL	22K	5%	1/10W
R378	1-216-295-00	METAL	0	5%	1/10W	R458	1-216-061-00	METAL	3.3K	5%	1/10W
R379	1-216-295-00	METAL	0	5%	1/10W	R459	1-216-061-00	METAL	3.3K	5%	1/10W
R380	1-216-033-00	METAL	220	5%	1/10W	R460	1-216-061-00	METAL	3.3K	5%	1/10W
R381	1-216-295-00	METAL	0	5%	1/10W	R461	1-216-065-00	METAL	4.7K	5%	1/10W
R382	1-216-065-00	METAL	4.7K	5%	1/10W	R462	1-216-051-00	METAL	1.2K	5%	1/10W
R383	1-216-073-00	METAL	10K	5%	1/10W	R463	1-216-059-00	METAL	2.7K	5%	1/10W
R384	1-216-061-00	METAL	3.3K	5%	1/10W	R464	1-216-097-00	METAL	100K	5%	1/10W
R385	1-216-065-00	METAL	4.7K	5%	1/10W	R465	1-216-049-00	METAL	1K	5%	1/10W
R386	1-216-033-00	METAL	220	5%	1/10W	R466	1-216-061-00	METAL	3.3K	5%	1/10W



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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R467	1-216-049-00	METAL	1K 5% 1/10W	R544	1-216-049-00	METAL	1K 5% 1/10W
R468	1-216-065-00	METAL	4.7K 5% 1/10W	R545	1-216-057-00	METAL	2.2K 5% 1/10W
R469	1-216-081-00	METAL	22K 5% 1/10W	R546	1-216-049-00	METAL	1K 5% 1/10W
R470	1-216-071-00	METAL	8.2K 5% 1/10W	R547	1-216-057-00	METAL	2.2K 5% 1/10W
R471	1-216-073-00	METAL	10K 5% 1/10W	R548	1-216-049-00	METAL	1K 5% 1/10W
R472	1-216-053-00	METAL	1.5K 5% 1/10W	R549	1-216-049-00	METAL	1K 5% 1/10W
R473	1-216-295-00	METAL	0 5% 1/10W	R550	1-216-049-00	METAL	1K 5% 1/10W
R474	1-216-053-00	METAL	1.5K 5% 1/10W	R551	1-216-057-00	METAL	2.2K 5% 1/10W
R475	1-216-065-00	METAL	4.7K 5% 1/10W	R552	1-216-057-00	METAL	2.2K 5% 1/10W
R476	1-216-067-00	METAL	5.6K 5% 1/10W	R553	1-216-033-00	METAL	220 5% 1/10W
R478	1-216-053-00	METAL	1.5K 5% 1/10W	R554	1-216-059-00	METAL	2.7K 5% 1/10W
R479	1-216-041-00	METAL	470 5% 1/10W	R555	1-216-059-00	METAL	2.7K 5% 1/10W
R481	1-216-295-00	METAL	0 5% 1/10W	R556	1-216-033-00	METAL	220 5% 1/10W
R482	1-216-644-11	METAL	510 0.50% 1/10W	R557	1-216-041-00	METAL	470 5% 1/10W
R483	1-216-033-00	METAL	220 5% 1/10W	R558	1-216-041-00	METAL	470 5% 1/10W
R489	1-216-045-00	METAL	680 5% 1/10W	R560	1-216-041-00	METAL	470 5% 1/10W
R490	1-216-041-00	METAL	470 5% 1/10W	R561	1-216-001-00	METAL	10 5% 1/10W
R491	1-216-053-00	METAL	1.5K 5% 1/10W	R563	1-216-001-00	METAL	10 5% 1/10W
R493	1-216-061-00	METAL	3.3K 5% 1/10W	R564	1-216-001-00	METAL	10 5% 1/10W
R494	1-216-071-00	METAL	8.2K 5% 1/10W	R565	1-216-001-00	METAL	10 5% 1/10W
R495	1-216-073-00	METAL	10K 5% 1/10W	R566	1-216-001-00	METAL	10 5% 1/10W
R496	1-216-073-00	METAL	10K 5% 1/10W	R567	1-216-001-00	METAL	10 5% 1/10W
R497	1-216-073-00	METAL	10K 5% 1/10W	R568	1-216-051-00	METAL	1.2K 5% 1/10W
R498	1-216-073-00	METAL	10K 5% 1/10W	R569	1-216-063-00	METAL	3.9K 5% 1/10W
R499	1-216-077-00	METAL	15K 5% 1/10W	R570	1-216-051-00	METAL	1.2K 5% 1/10W
R501	1-216-057-00	METAL	2.2K 5% 1/10W	R571	1-216-061-00	METAL	3.3K 5% 1/10W
R502	1-216-057-00	METAL	2.2K 5% 1/10W	R572	1-216-041-00	METAL	470 5% 1/10W
R503	1-216-057-00	METAL	2.2K 5% 1/10W	R575	1-216-041-00	METAL	470 5% 1/10W
R504	1-216-295-00	METAL	0 5% 1/10W	R576	1-216-041-00	METAL	470 5% 1/10W
R505	1-216-033-00	METAL	220 5% 1/10W	R577	1-216-053-00	METAL	1.5K 5% 1/10W
R506	1-216-033-00	METAL	220 5% 1/10W	R578	1-216-081-00	METAL	22K 5% 1/10W
R507	1-216-033-00	METAL	220 5% 1/10W	R579	1-216-081-00	METAL	22K 5% 1/10W
R508	1-216-033-00	METAL	220 5% 1/10W	R581	1-216-055-00	METAL	1.8K 5% 1/10W
R509	1-216-057-00	METAL	2.2K 5% 1/10W	R582	1-216-053-00	METAL	1.5K 5% 1/10W
R510	1-216-057-00	METAL	2.2K 5% 1/10W	R583	1-216-053-00	METAL	1.5K 5% 1/10W
R511	1-216-057-00	METAL	2.2K 5% 1/10W	R584	1-216-061-00	METAL	3.3K 5% 1/10W
R512	1-216-033-00	METAL	220 5% 1/10W	R585	1-216-053-00	METAL	1.5K 5% 1/10W
R514	1-216-057-00	METAL	2.2K 5% 1/10W	R587	1-216-073-00	METAL	10K 5% 1/10W
R515	1-216-033-00	METAL	220 5% 1/10W	R589	1-216-033-00	METAL	220 5% 1/10W
R516	1-216-033-00	METAL	220 5% 1/10W	R590	1-216-033-00	METAL	220 5% 1/10W
R517	1-216-033-00	METAL	220 5% 1/10W	R591	1-216-033-00	METAL	220 5% 1/10W
R518	1-216-033-00	METAL	220 5% 1/10W	R601	1-216-050-00	METAL	1.1K 5% 1/10W
R519	1-216-057-00	METAL	2.2K 5% 1/10W	R602	1-216-063-00	METAL	3.9K 5% 1/10W
R520	1-216-033-00	METAL	220 5% 1/10W	R603	1-216-059-00	METAL	2.7K 5% 1/10W
R521	1-216-033-00	METAL	220 5% 1/10W	R604	1-216-051-00	METAL	1.2K 5% 1/10W
R522	1-216-057-00	METAL	2.2K 5% 1/10W	R605	1-216-046-00	METAL	750 5% 1/10W
R523	1-216-057-00	METAL	2.2K 5% 1/10W	R606	1-216-041-00	METAL	470 5% 1/10W
R524	1-216-057-00	METAL	2.2K 5% 1/10W	R607	1-216-041-00	METAL	470 5% 1/10W
R526	1-216-295-00	METAL	0 5% 1/10W	R608	1-216-057-00	METAL	2.2K 5% 1/10W
R527	1-216-053-00	METAL	1.5K 5% 1/10W	R609	1-216-057-00	METAL	2.2K 5% 1/10W
R528	1-216-033-00	METAL	220 5% 1/10W	R620	1-216-055-00	METAL	1.8K 5% 1/10W
R529	1-216-057-00	METAL	2.2K 5% 1/10W	R621	1-216-045-00	METAL	680 5% 1/10W
R530	1-216-049-00	METAL	1K 5% 1/10W	R622	1-216-055-00	METAL	1.8K 5% 1/10W
R531	1-216-057-00	METAL	2.2K 5% 1/10W	R623	1-216-045-00	METAL	680 5% 1/10W
R532	1-216-049-00	METAL	1K 5% 1/10W	R630	1-216-037-00	METAL	330 5% 1/10W
R534	1-216-033-00	METAL	220 5% 1/10W	R631	1-216-037-00	METAL	330 5% 1/10W
R535	1-216-033-00	METAL	220 5% 1/10W	R901	1-216-049-00	METAL	1K 5% 1/10W
R536	1-216-033-00	METAL	220 5% 1/10W	R902	1-216-049-00	METAL	1K 5% 1/10W
R537	1-216-049-00	METAL	1K 5% 1/10W	R903	1-216-057-00	METAL	2.2K 5% 1/10W
R538	1-216-049-00	METAL	1K 5% 1/10W	R905	1-216-057-00	METAL	2.2K 5% 1/10W
R539	1-216-685-11	METAL	27K 0.50% 1/10W	R906	1-216-033-00	METAL	220 5% 1/10W
R540	1-216-049-00	METAL	1K 5% 1/10W	R907	1-216-057-00	METAL	2.2K 5% 1/10W
R541	1-216-049-00	METAL	1K 5% 1/10W	R908	1-216-057-00	METAL	2.2K 5% 1/10W
R542	1-216-049-00	METAL	1K 5% 1/10W	R910	1-216-073-00	METAL	10K 5% 1/10W
R543	1-216-057-00	METAL	2.2K 5% 1/10W	R911	1-216-073-00	METAL	10K 5% 1/10W



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DUS-12

FMY-13P

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R915	1-216-049-00	METAL 1K 5%	1/10W	*A-8275-599-A	FMY-13P BOARD, COMPLETE		
R916	1-216-057-00	METAL 2.2K 5%	1/10W		*****		
R917	1-216-049-00	METAL 1K 5%	1/10W		<BUZZER>		
R931	1-216-025-00	METAL 100 5%	1/10W	BZ901	1-529-069-11	BUZZER, PIEZOELECTRIC	
R932	1-216-065-00	METAL 4.7K 5%	1/10W		<CAPACITOR>		
R934	1-216-041-00	METAL 470 5%	1/10W	C102	1-163-227-11	CERAMIC 10PF	50V
R936	1-216-055-00	METAL 1.8K 5%	1/10W	C103	1-126-204-11	ELECT 47uF	20% 16V
R937	1-216-045-00	METAL 680 5%	1/10W	C104	1-163-038-00	CERAMIC 0.1uF	25V
R938	1-216-045-00	METAL 680 5%	1/10W	C105	1-163-038-00	CERAMIC 0.1uF	25V
R939	1-216-041-00	METAL 470 5%	1/10W	C106	1-163-038-00	CERAMIC 0.1uF	25V
R940	1-216-295-00	METAL 0 5%	1/10W	C108	1-163-038-00	CERAMIC 0.1uF	25V
R941	1-216-295-00	METAL 0 5%	1/10W	C110	1-126-217-11	ELECT 15uF	20% 10V
R943	1-216-295-00	METAL 0 5%	1/10W	C111	1-163-038-00	CERAMIC 0.1uF	25V
R945	1-216-295-00	METAL 0 5%	1/10W	C112	1-163-117-00	CERAMIC 100PF	5% 50V
R950	1-216-041-00	METAL 470 5%	1/10W	C113	1-126-217-11	ELECT 15uF	20% 10V
R951	1-216-097-00	METAL 100K 5%	1/10W	C114	1-163-038-00	CERAMIC 0.1uF	25V
R952	1-216-065-00	METAL 4.7K 5%	1/10W	C115	1-126-217-11	ELECT 15uF	20% 10V
R954	1-216-065-00	METAL 4.7K 5%	1/10W	C116	1-163-038-00	CERAMIC 0.1uF	25V
R960	1-216-059-00	METAL 2.7K 5%	1/10W	C202	1-163-227-11	CERAMIC 10PF	50V
R982	1-216-049-00	METAL 1K 5%	1/10W	C204	1-163-038-00	CERAMIC 0.1uF	25V
R983	1-216-049-00	METAL 1K 5%	1/10W	C205	1-163-038-00	CERAMIC 0.1uF	25V
R984	1-216-049-00	METAL 1K 5%	1/10W	C206	1-163-038-00	CERAMIC 0.1uF	25V
		<VARIABLE RESISTOR>		C208	1-163-038-00	CERAMIC 0.1uF	25V
RV301	1-238-852-11	RES, ADJ, CERMET 470		C210	1-126-217-11	ELECT 15uF	20% 10V
RV302	1-238-852-11	RES, ADJ, CERMET 470		C211	1-163-038-00	CERAMIC 0.1uF	25V
RV303	1-238-852-11	RES, ADJ, CERMET 470		C212	1-163-117-00	CERAMIC 100PF	5% 50V
RV304	1-238-852-11	RES, ADJ, CERMET 470		C213	1-126-217-11	ELECT 15uF	20% 10V
		<CRYSTAL>		C214	1-163-038-00	CERAMIC 0.1uF	25V
X101	1-760-193-11	VIBRATOR, CRYSTAL		C215	1-126-217-11	ELECT 15uF	20% 10V
X102	1-579-780-21	VIBRATOR, CRYSTAL		C216	1-163-038-00	CERAMIC 0.1uF	25V
X301	1-579-661-21	OSCILLATOR, CRYSTAL		C302	1-163-227-11	CERAMIC 10PF	50V
		*****		C304	1-163-077-00	CERAMIC 0.1uF	10% 25V
	*A-8275-445-A	DUS-12 BOARD, COMPLETE		C305	1-163-038-00	CERAMIC 0.1uF	25V
		*****		C306	1-163-038-00	CERAMIC 0.1uF	25V
		<CAPACITOR>		C308	1-163-038-00	CERAMIC 0.1uF	25V
C901	1-165-319-11	CERAMIC 0.1uF	50V	C310	1-126-217-11	ELECT 15uF	20% 10V
		<CONNECTOR>		C311	1-163-038-00	CERAMIC 0.1uF	25V
CN907	1-506-468-11	PIN, CONNECTOR 3P		C312	1-163-117-00	CERAMIC 100PF	5% 50V
CN908	1-506-468-11	PIN, CONNECTOR 3P		C313	1-126-217-11	ELECT 15uF	20% 10V
CN911	1-506-470-11	PIN, CONNECTOR 5P		C314	1-163-038-00	CERAMIC 0.1uF	25V
CN912	1-506-467-11	PIN, CONNECTOR 2P		C315	1-126-217-11	ELECT 15uF	20% 10V
		<IC>		C316	1-163-038-00	CERAMIC 0.1uF	25V
IC901	8-759-633-10	IC M54544AL		C401	1-163-038-00	CERAMIC 0.1uF	25V
IC902	8-759-100-93	IC UPC393G2		C402	1-164-004-11	CERAMIC 0.1uF	10% 25V
		<REGISTOR>		C403	1-163-038-00	CERAMIC 0.1uF	25V
R901	1-216-037-00	METAL 330 5%	1/10W	C404	1-163-038-00	CERAMIC 0.1uF	25V
R902	1-216-085-00	METAL 33K 5%	1/10W	C406	1-163-038-00	CERAMIC 0.1uF	25V
R903	1-216-085-00	METAL 33K 5%	1/10W	C407	1-163-038-00	CERAMIC 0.1uF	25V
R904	1-216-081-00	METAL 22K 5%	1/10W	C408	1-163-038-00	CERAMIC 0.1uF	25V
R905	1-216-073-00	METAL 10K 5%	1/10W	C409	1-163-038-00	CERAMIC 0.1uF	25V
R906	1-216-105-00	METAL 220K 5%	1/10W	C410	1-126-204-11	ELECT 47uF	20% 16V
R907	1-216-089-91	METAL 47K 5%	1/10W	C411	1-126-204-11	ELECT 47uF	20% 16V
R908	1-216-097-00	METAL 100K 5%	1/10W	C412	1-126-204-11	ELECT 47uF	20% 16V
R909	1-216-097-00	METAL 100K 5%	1/10W	C413	1-163-038-00	CERAMIC 0.1uF	25V
R924	1-216-041-00	METAL 470 5%	1/10W	C414	1-163-038-00	CERAMIC 0.1uF	25V
R925	1-216-041-00	METAL 470 5%	1/10W	C415	1-126-204-11	ELECT 47uF	20% 16V
		*****		C416	1-163-038-00	CERAMIC 0.1uF	25V
				C417	1-163-038-00	CERAMIC 0.1uF	25V
				C418	1-163-038-00	CERAMIC 0.1uF	25V
				C420	1-164-004-11	CERAMIC 0.1uF	10% 25V
				C421	1-163-132-00	CERAMIC 430PF	5% 50V
				C422	1-163-113-00	CERAMIC 68PF	5% 50V
				C423	1-163-113-00	CERAMIC 68PF	5% 50V

# **FMY-13P**

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C424	1-163-113-00	CERAMIC	68PF 5% 50V	<CONNECTOR>			
C425	1-163-113-00	CERAMIC	68PF 5% 50V	CN1	1-565-212-11	CONNECTOR, FPC (ZIF) 26P	
C426	1-163-113-00	CERAMIC	68PF 5% 50V	CN2	1-565-212-11	CONNECTOR, FPC (ZIF) 26P	
C427	1-163-113-00	CERAMIC	68PF 5% 50V	CN4	1-566-532-11	CONNECTOR, FPC (ZIF) 16P	
C428	1-163-113-00	CERAMIC	68PF 5% 50V	CN5	1-566-523-11	CONNECTOR, FPC (ZIF) 7P	
C429	1-163-113-00	CERAMIC	68PF 5% 50V	CN6	*1-506-472-11	PIN, CONNECTOR 7P	
C430	1-163-113-00	CERAMIC	68PF 5% 50V	CN7	*1-506-472-11	PIN, CONNECTOR 7P	
C501	1-164-346-11	CERAMIC	1uF 16V	CN8	*1-560-894-00	PIN, CONNECTOR 6P	
C502	1-164-346-11	CERAMIC	1uF 16V	CN9	1-506-469-11	PIN, CONNECTOR 4P	
C503	1-164-346-11	CERAMIC	1uF 16V	CN10	1-506-469-11	PIN, CONNECTOR 4P	
C504	1-164-346-11	CERAMIC	1uF 16V	<DIODE>			
C505	1-164-346-11	CERAMIC	1uF 16V	D101	8-719-820-41	DIODE 1SS302	
C506	1-164-346-11	CERAMIC	1uF 16V	D201	8-719-820-41	DIODE 1SS302	
C507	1-163-038-00	CERAMIC	0.1uF 25V	D301	8-719-820-41	DIODE 1SS302	
C508	1-126-204-11	ELECT	47uF 20% 16V	D901	8-719-801-78	DIODE 1SS184	
C519	1-163-109-00	CERAMIC	47PF 5% 50V	D903	8-719-104-34	DIODE 1S2836	
C520	1-163-109-00	CERAMIC	47PF 5% 50V	<FERRITE BEAD>			
C521	1-163-117-00	CERAMIC	100PF 5% 50V	FB137	1-412-390-21	INDUCTOR CHIP OUH	
C522	1-163-038-00	CERAMIC	0.1uF 25V	FB138	1-412-390-21	INDUCTOR CHIP OUH	
C523	1-163-038-00	CERAMIC	0.1uF 25V	FB139	1-412-390-21	INDUCTOR CHIP OUH	
C526	1-163-038-00	CERAMIC	0.1uF 25V	FB140	1-412-390-21	INDUCTOR CHIP OUH	
C527	1-163-038-00	CERAMIC	0.1uF 25V	FB141	1-412-390-21	INDUCTOR CHIP OUH	
C528	1-163-038-00	CERAMIC	0.1uF 25V	FB142	1-412-390-21	INDUCTOR CHIP OUH	
C529	1-126-204-11	ELECT	47uF 20% 16V	FB143	1-412-390-21	INDUCTOR CHIP OUH	
C530	1-164-346-11	CERAMIC	1uF 16V	FB144	1-412-390-21	INDUCTOR CHIP OUH	
C531	1-163-109-00	CERAMIC	47PF 5% 50V	FB145	1-412-390-21	INDUCTOR CHIP OUH	
C532	1-163-235-11	CERAMIC	22PF 5% 50V	FB147	1-412-390-21	INDUCTOR CHIP OUH	
C533	1-163-235-11	CERAMIC	22PF 5% 50V	FB149	1-412-390-21	INDUCTOR CHIP OUH	
C534	1-126-204-11	ELECT	47uF 20% 16V	FB150	1-412-390-21	INDUCTOR CHIP OUH	
C535	1-163-038-00	CERAMIC	0.1uF 25V	FB151	1-412-390-21	INDUCTOR CHIP OUH	
C536	1-163-109-00	CERAMIC	47PF 5% 50V	FB152	1-412-390-21	INDUCTOR CHIP OUH	
C537	1-163-038-00	CERAMIC	0.1uF 25V	FB153	1-412-390-21	INDUCTOR CHIP OUH	
C538	1-163-038-00	CERAMIC	0.1uF 25V	FB154	1-412-390-21	INDUCTOR CHIP OUH	
C539	1-163-038-00	CERAMIC	0.1uF 25V	<IC>			
C540	1-163-038-00	CERAMIC	0.1uF 25V	IC101	8-752-337-04	IC CXD1176	
C541	1-163-038-00	CERAMIC	0.1uF 25V	IC201	8-752-337-04	IC CXD1176	
C542	1-163-038-00	CERAMIC	0.1uF 25V	IC301	8-752-337-04	IC CXD1176	
C543	1-163-038-00	CERAMIC	0.1uF 25V	IC401	8-759-093-19	IC CXD8444Q	
C544	1-163-038-00	CERAMIC	0.1uF 25V	IC402	8-752-338-46	IC CXD1178Q	
C545	1-126-204-11	ELECT	47uF 20% 16V	IC403	*8-759-258-60	IC M5M27C101FP-UP12M-E2	
C546	1-163-038-00	CERAMIC	0.1uF 25V	IC404	*8-759-258-61	IC M5M27C101FP-UP12S-E2	
C547	1-163-038-00	CERAMIC	0.1uF 25V	IC405	8-759-038-00	IC MC74HC574AF	
C548	1-163-038-00	CERAMIC	0.1uF 25V	IC501	8-759-255-89	IC HM514400AS7GS-EL	
C549	1-163-113-00	CERAMIC	68PF 5% 50V	IC502	8-759-255-89	IC HM514400AS7GS-EL	
C550	1-163-038-00	CERAMIC	0.1uF 25V	IC503	8-759-255-89	IC HM514400AS7GS-EL	
C551	1-163-038-00	CERAMIC	0.1uF 25V	IC504	8-759-255-89	IC HM514400AS7GS-EL	
C601	1-163-037-11	CERAMIC	0.022uF 10% 25V	IC505	8-759-255-89	IC HM514400AS7GS-EL	
C602	1-128-065-11	ELECT	68uF 20% 10V	IC506	8-759-255-89	IC HM514400AS7GS-EL	
C603	1-163-037-11	CERAMIC	0.022uF 10% 25V	IC507	8-759-114-07	IC UPD65013GF-407-3BA	
C604	1-128-065-11	ELECT	68uF 20% 10V	IC508	8-759-114-09	IC UPD65006GF-250-3B8	
C605	1-163-037-11	CERAMIC	0.022uF 10% 25V	IC509	8-759-084-15	IC CXD8391Q	
C606	1-126-204-11	ELECT	47uF 20% 16V	IC510	*8-759-262-39	IC HD6475368F-FMY13-01	
C607	1-163-037-11	CERAMIC	0.022uF 10% 25V	IC511	8-759-992-78	IC 74F257ASJ-T5L	
C608	1-126-204-11	ELECT	47uF 20% 16V	IC512	8-759-989-03	IC 74F32SJ	
C901	1-163-038-00	CERAMIC	0.1uF 25V	IC513	8-759-989-03	IC 74F32SJ	
C902	1-163-038-00	CERAMIC	0.1uF 25V	IC514	8-759-948-02	IC 74F86SJ	
C903	1-163-038-00	CERAMIC	0.1uF 25V	IC515	8-759-948-01	IC 74F04SJ	
C904	1-163-038-00	CERAMIC	0.1uF 25V	IC516	8-759-989-01	IC 74F08SJ	
C905	1-163-038-00	CERAMIC	0.1uF 25V	IC901	8-759-265-37	IC MB89093FFV-G-125-BND	
C906	1-163-097-00	CERAMIC	15PF 5% 50V	IC902	8-759-937-56	IC S-8054ALB-LM-S	
C907	1-163-097-00	CERAMIC	15PF 5% 50V				
C909	1-128-065-11	ELECT	68uF 20% 10V				
C910	1-163-038-00	CERAMIC	0.1uF 25V				
C911	1-163-038-00	CERAMIC	0.1uF 25V				
C912	1-163-038-00	CERAMIC	0.1uF 25V				

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
		<INDUCTOR>					
L904	1-412-188-11	INDUCTOR 22UH		R245	1-216-033-00	METAL 220 5%	1/10W
		<TRANSISTOR>		R246	1-216-053-00	METAL 1.5K 5%	1/10W
Q101	8-729-010-75	TRANSISTOR MSC4116-B/C		R247	1-216-295-00	METAL 0 5%	1/10W
Q102	8-729-402-84	TRANSISTOR XN4601		R304	1-216-017-00	METAL 47 5%	1/10W
Q201	8-729-010-75	TRANSISTOR MSC4116-B/C		R305	1-216-033-00	METAL 220 5%	1/10W
Q202	8-729-402-84	TRANSISTOR XN4601		R306	1-216-033-00	METAL 220 5%	1/10W
Q301	8-729-010-75	TRANSISTOR MSC4116-B/C		R307	1-216-033-00	METAL 220 5%	1/10W
Q302	8-729-402-84	TRANSISTOR XN4601		R308	1-216-033-00	METAL 220 5%	1/10W
Q401	8-729-901-01	TRANSISTOR DTC144EK		R309	1-216-033-00	METAL 220 5%	1/10W
Q902	8-729-901-01	TRANSISTOR DTC144EK		R310	1-216-033-00	METAL 220 5%	1/10W
Q903	8-729-901-01	TRANSISTOR DTC144EK		R311	1-216-033-00	METAL 220 5%	1/10W
		<RESISTOR>		R312	1-216-033-00	METAL 220 5%	1/10W
R104	1-216-017-00	METAL 47 5%	1/10W	R329	1-216-033-00	METAL 220 5%	1/10W
R105	1-216-033-00	METAL 220 5%	1/10W	R330	1-216-041-00	METAL 470 5%	1/10W
R106	1-216-033-00	METAL 220 5%	1/10W	R331	1-216-041-00	METAL 470 5%	1/10W
R107	1-216-033-00	METAL 220 5%	1/10W	R332	1-216-041-00	METAL 470 5%	1/10W
R108	1-216-033-00	METAL 220 5%	1/10W	R333	1-216-041-00	METAL 470 5%	1/10W
R109	1-216-033-00	METAL 220 5%	1/10W	R334	1-216-041-00	METAL 470 5%	1/10W
R110	1-216-033-00	METAL 220 5%	1/10W	R335	1-216-041-00	METAL 470 5%	1/10W
R111	1-216-033-00	METAL 220 5%	1/10W	R336	1-216-041-00	METAL 470 5%	1/10W
R112	1-216-033-00	METAL 220 5%	1/10W	R337	1-216-041-00	METAL 470 5%	1/10W
R129	1-216-033-00	METAL 220 5%	1/10W	R340	1-216-009-00	METAL 22 5%	1/10W
R130	1-216-041-00	METAL 470 5%	1/10W	R341	1-216-025-00	METAL 100 5%	1/10W
R131	1-216-041-00	METAL 470 5%	1/10W	R342	1-216-073-00	METAL 10K 5%	1/10W
R132	1-216-041-00	METAL 470 5%	1/10W	R343	1-216-073-00	METAL 10K 5%	1/10W
R133	1-216-041-00	METAL 470 5%	1/10W	R344	1-216-053-00	METAL 1.5K 5%	1/10W
R134	1-216-041-00	METAL 470 5%	1/10W	R345	1-216-033-00	METAL 220 5%	1/10W
R135	1-216-041-00	METAL 470 5%	1/10W	R346	1-216-053-00	METAL 1.5K 5%	1/10W
R136	1-216-041-00	METAL 470 5%	1/10W	R347	1-216-295-00	METAL 0 5%	1/10W
R137	1-216-041-00	METAL 470 5%	1/10W	R401	1-216-295-00	METAL 0 5%	1/10W
R140	1-216-009-00	METAL 22 5%	1/10W	R402	1-216-017-00	METAL 47 5%	1/10W
R141	1-216-025-00	METAL 100 5%	1/10W	R403	1-216-032-00	METAL 200 5%	1/10W
R142	1-216-073-00	METAL 10K 5%	1/10W	R404	1-216-032-00	METAL 200 5%	1/10W
R143	1-216-073-00	METAL 10K 5%	1/10W	R405	1-216-032-00	METAL 200 5%	1/10W
R144	1-216-053-00	METAL 1.5K 5%	1/10W	R406	1-216-061-00	METAL 3.3K 5%	1/10W
R145	1-216-033-00	METAL 220 5%	1/10W	R422	1-216-065-00	METAL 4.7K 5%	1/10W
R146	1-216-053-00	METAL 1.5K 5%	1/10W	R423	1-216-295-00	METAL 0 5%	1/10W
R147	1-216-295-00	METAL 0 5%	1/10W	R424	1-216-295-00	METAL 0 5%	1/10W
R204	1-216-017-00	METAL 47 5%	1/10W	R426	1-216-295-00	METAL 0 5%	1/10W
R205	1-216-033-00	METAL 220 5%	1/10W	R427	1-216-069-00	METAL 6.8K 5%	1/10W
R206	1-216-033-00	METAL 220 5%	1/10W	R428	1-216-069-00	METAL 6.8K 5%	1/10W
R206	1-216-295-00	METAL 0 5%	1/10W	R429	1-216-049-00	METAL 1K 5%	1/10W
R207	1-216-033-00	METAL 220 5%	1/10W	R429	1-216-049-00	METAL 1K 5%	1/10W
R208	1-216-033-00	METAL 220 5%	1/10W	R430	1-216-295-00	METAL 0 5%	1/10W
R209	1-216-033-00	METAL 220 5%	1/10W	R441	1-216-295-00	METAL 0 5%	1/10W
R210	1-216-033-00	METAL 220 5%	1/10W	R442	1-216-073-00	METAL 10K 5%	1/10W
R211	1-216-033-00	METAL 220 5%	1/10W	R443	1-216-063-00	METAL 3.9K 5%	1/10W
R212	1-216-033-00	METAL 220 5%	1/10W	R444	1-216-037-00	METAL 330 5%	1/10W
R229	1-216-033-00	METAL 220 5%	1/10W	R445	1-216-025-00	METAL 100 5%	1/10W
R230	1-216-041-00	METAL 470 5%	1/10W	R446	1-216-077-00	METAL 15K 5%	1/10W
R231	1-216-041-00	METAL 470 5%	1/10W	R447	1-216-073-00	METAL 10K 5%	1/10W
R232	1-216-041-00	METAL 470 5%	1/10W	R448	1-216-033-00	METAL 220 5%	1/10W
R233	1-216-041-00	METAL 470 5%	1/10W	R449	1-216-037-00	METAL 330 5%	1/10W
R234	1-216-041-00	METAL 470 5%	1/10W	R450	1-216-033-00	METAL 220 5%	1/10W
R235	1-216-041-00	METAL 470 5%	1/10W	R451	1-216-077-00	METAL 15K 5%	1/10W
R236	1-216-041-00	METAL 470 5%	1/10W	R452	1-216-073-00	METAL 10K 5%	1/10W
R237	1-216-041-00	METAL 470 5%	1/10W	R453	1-216-033-00	METAL 220 5%	1/10W
R240	1-216-009-00	METAL 22 5%	1/10W	R454	1-216-037-00	METAL 330 5%	1/10W
R241	1-216-025-00	METAL 100 5%	1/10W	R455	1-216-033-00	METAL 220 5%	1/10W
R242	1-216-073-00	METAL 10K 5%	1/10W	R456	1-216-121-00	METAL 1M 5%	1/10W
R243	1-216-073-00	METAL 10K 5%	1/10W	R457	1-216-121-00	METAL 1M 5%	1/10W
R244	1-216-053-00	METAL 1.5K 5%	1/10W	R458	1-216-121-00	METAL 1M 5%	1/10W
				R459	1-216-295-00	METAL 0 5%	1/10W
				R471	1-216-295-00	METAL 0 5%	1/10W
				R474	1-216-295-00	METAL 0 5%	1/10W

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R476	1-216-295-00	METAL	0 5% 1/10W	R606	1-216-033-00	METAL	220 5% 1/10W
R478	1-216-121-00	METAL	1M 5% 1/10W	R607	1-216-033-00	METAL	220 5% 1/10W
R501	1-216-017-00	METAL	47 5% 1/10W	R608	1-216-033-00	METAL	220 5% 1/10W
R502	1-216-017-00	METAL	47 5% 1/10W	R609	1-216-033-00	METAL	220 5% 1/10W
R503	1-216-017-00	METAL	47 5% 1/10W	R610	1-216-033-00	METAL	220 5% 1/10W
R504	1-216-017-00	METAL	47 5% 1/10W	R611	1-216-033-00	METAL	220 5% 1/10W
R505	1-216-017-00	METAL	47 5% 1/10W	R612	1-216-033-00	METAL	220 5% 1/10W
R506	1-216-017-00	METAL	47 5% 1/10W	R613	1-216-033-00	METAL	220 5% 1/10W
R507	1-216-017-00	METAL	47 5% 1/10W	R614	1-216-033-00	METAL	220 5% 1/10W
R508	1-216-017-00	METAL	47 5% 1/10W	R615	1-216-033-00	METAL	220 5% 1/10W
R509	1-216-017-00	METAL	47 5% 1/10W	R616	1-216-033-00	METAL	220 5% 1/10W
R510	1-216-017-00	METAL	47 5% 1/10W	R617	1-216-033-00	METAL	220 5% 1/10W
R511	1-216-049-00	METAL	1K 5% 1/10W	R618	1-216-033-00	METAL	220 5% 1/10W
R512	1-216-049-00	METAL	1K 5% 1/10W	R619	1-216-033-00	METAL	220 5% 1/10W
R513	1-216-017-00	METAL	47 5% 1/10W	R620	1-216-295-00	METAL	0 5% 1/10W
R514	1-216-017-00	METAL	47 5% 1/10W	R621	1-216-295-00	METAL	0 5% 1/10W
R515	1-216-017-00	METAL	47 5% 1/10W	R622	1-216-295-00	METAL	0 5% 1/10W
R517	1-216-017-00	METAL	47 5% 1/10W	R623	1-216-295-00	METAL	0 5% 1/10W
R518	1-216-017-00	METAL	47 5% 1/10W	R624	1-216-295-00	METAL	0 5% 1/10W
R519	1-216-025-00	METAL	100 5% 1/10W	R625	1-216-295-00	METAL	0 5% 1/10W
R525	1-216-017-00	METAL	47 5% 1/10W	R626	1-216-295-00	METAL	0 5% 1/10W
R526	1-216-017-00	METAL	47 5% 1/10W	R627	1-216-295-00	METAL	0 5% 1/10W
R527	1-216-049-00	METAL	1K 5% 1/10W	R628	1-216-295-00	METAL	0 5% 1/10W
R530	1-216-041-00	METAL	470 5% 1/10W	R642	1-216-295-00	METAL	0 5% 1/10W
R531	1-216-017-00	METAL	47 5% 1/10W	R643	1-216-065-00	METAL	4.7K 5% 1/10W
R532	1-216-017-00	METAL	47 5% 1/10W	R647	1-216-295-00	METAL	0 5% 1/10W
R536	1-216-017-00	METAL	47 5% 1/10W	R650	1-216-033-00	METAL	220 5% 1/10W
R541	1-216-017-00	METAL	47 5% 1/10W	R651	1-216-295-00	METAL	0 5% 1/10W
R542	1-216-065-00	METAL	4.7K 5% 1/10W	R652	1-216-033-00	METAL	220 5% 1/10W
R551	1-216-295-00	METAL	0 5% 1/10W	R816	1-216-295-00	METAL	0 5% 1/10W
R556	1-216-295-00	METAL	0 5% 1/10W	R817	1-216-295-00	METAL	0 5% 1/10W
R564	1-216-033-00	METAL	220 5% 1/10W	R818	1-216-295-00	METAL	0 5% 1/10W
R565	1-216-033-00	METAL	220 5% 1/10W	R819	1-216-066-00	METAL	5.1K 5% 1/10W
R566	1-216-089-91	METAL	47K 5% 1/10W	R820	1-216-066-00	METAL	5.1K 5% 1/10W
R568	1-216-295-00	METAL	0 5% 1/10W	R821	1-216-066-00	METAL	5.1K 5% 1/10W
R572	1-216-089-91	METAL	47K 5% 1/10W	R822	1-216-066-00	METAL	5.1K 5% 1/10W
R573	1-216-017-00	METAL	47 5% 1/10W	R823	1-216-025-00	METAL	100 5% 1/10W
R574	1-216-017-00	METAL	47 5% 1/10W	R824	1-216-033-00	METAL	220 5% 1/10W
R575	1-216-017-00	METAL	47 5% 1/10W	R901	1-216-089-91	METAL	47K 5% 1/10W
R576	1-216-049-00	METAL	1K 5% 1/10W	R908	1-216-089-91	METAL	47K 5% 1/10W
R578	1-216-295-00	METAL	0 5% 1/10W	R910	1-216-089-91	METAL	47K 5% 1/10W
R579	1-216-295-00	METAL	0 5% 1/10W	R911	1-216-089-91	METAL	47K 5% 1/10W
R580	1-216-073-00	METAL	10K 5% 1/10W	R912	1-216-089-91	METAL	47K 5% 1/10W
R582	1-216-295-00	METAL	0 5% 1/10W	R915	1-216-089-91	METAL	47K 5% 1/10W
R583	1-216-033-00	METAL	220 5% 1/10W	R916	1-216-089-91	METAL	47K 5% 1/10W
R584	1-216-033-00	METAL	220 5% 1/10W	R917	1-216-025-00	METAL	100 5% 1/10W
R585	1-216-033-00	METAL	220 5% 1/10W	R918	1-216-089-91	METAL	47K 5% 1/10W
R586	1-216-033-00	METAL	220 5% 1/10W	R919	1-216-089-91	METAL	47K 5% 1/10W
R587	1-216-033-00	METAL	220 5% 1/10W	R920	1-216-025-00	METAL	100 5% 1/10W
R588	1-216-033-00	METAL	220 5% 1/10W	R921	1-216-025-00	METAL	100 5% 1/10W
R590	1-216-037-00	METAL	330 5% 1/10W	R922	1-216-089-91	METAL	47K 5% 1/10W
R591	1-216-037-00	METAL	330 5% 1/10W	R923	1-216-025-00	METAL	100 5% 1/10W
R592	1-216-033-00	METAL	220 5% 1/10W	R924	1-216-089-91	METAL	47K 5% 1/10W
R593	1-216-033-00	METAL	220 5% 1/10W	R926	1-216-295-00	METAL	0 5% 1/10W
R594	1-216-033-00	METAL	220 5% 1/10W	R927	1-216-295-00	METAL	0 5% 1/10W
R595	1-216-033-00	METAL	220 5% 1/10W	R928	1-216-109-00	METAL	330K 5% 1/10W
R596	1-216-033-00	METAL	220 5% 1/10W	R929	1-216-025-00	METAL	100 5% 1/10W
R597	1-216-033-00	METAL	220 5% 1/10W	R935	1-216-055-00	METAL	1.8K 5% 1/10W
R599	1-216-033-00	METAL	220 5% 1/10W	R936	1-216-097-00	METAL	100K 5% 1/10W
R600	1-216-033-00	METAL	220 5% 1/10W	R937	1-216-049-00	METAL	1K 5% 1/10W
R601	1-216-049-00	METAL	1K 5% 1/10W	R939	1-216-065-00	METAL	4.7K 5% 1/10W
R602	1-216-033-00	METAL	220 5% 1/10W	R942	1-216-065-00	METAL	4.7K 5% 1/10W
R603	1-216-033-00	METAL	220 5% 1/10W	R945	1-216-041-00	METAL	470 5% 1/10W
R604	1-216-033-00	METAL	220 5% 1/10W				
R605	1-216-033-00	METAL	220 5% 1/10W				

<b>FMY-13P</b>	<b>HM-22P(L)</b>
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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
<CRYSTAL>							
X501	1-579-868-11	VIBRATOR, CRYSTAL		C766	1-162-970-11	CERAMIC 0.01uF 10%	25V
X901	1-579-550-11	VIBRATOR, CRYSTAL		C767	1-162-970-11	CERAMIC 0.01uF 10%	25V
XTL901	1-579-369-21	VIBRATOR		C768	1-164-357-11	CERAMIC 1000PF 5%	50V
*****				C769	1-164-357-11	CERAMIC 1000PF 5%	50V
*A-8275-598-A HM-22P(L) BOARD, COMPLETE				C770	1-165-112-11	CERAMIC 0.33uF	16V
*****				C771	1-165-112-11	CERAMIC 0.33uF	16V
<CAPACITOR>				C776	1-165-112-11	CERAMIC 0.33uF	16V
C701	1-126-950-11	ELECT 330uF 20%	35V	C777	1-165-112-11	CERAMIC 0.33uF	16V
C703	1-165-112-11	CERAMIC 0.33uF	16V	C778	1-165-112-11	CERAMIC 0.33uF	16V
C704	1-165-112-11	CERAMIC 0.33uF	16V	C779	1-162-939-11	CERAMIC 8PF	50V
C705	1-124-779-00	ELECT 10uF 20%	16V	C780	1-162-939-11	CERAMIC 8PF	50V
C706	1-165-112-11	CERAMIC 0.33uF	16V	C781	1-162-951-11	CERAMIC 68PF 5%	50V
C707	1-165-112-11	CERAMIC 0.33uF	16V	C782	1-162-951-11	CERAMIC 68PF 5%	50V
C708	1-135-166-21	TANTAL 47uF 20%	6.3V	C783	1-162-951-11	CERAMIC 68PF 5%	50V
C711	1-165-112-11	CERAMIC 0.33uF	16V	C784	1-162-951-11	CERAMIC 68PF 5%	50V
C712	1-165-112-11	CERAMIC 0.33uF	16V	C785	1-162-951-11	CERAMIC 68PF 5%	50V
C713	1-162-970-11	CERAMIC 0.01uF 10%	25V	<CONNECTOR>			
C714	1-162-970-11	CERAMIC 0.01uF 10%	25V	CN701	*1-580-055-21	PIN, CONNECTOR 2P	
C715	1-165-112-11	CERAMIC 0.33uF	16V	CN702	*1-580-056-21	PIN, CONNECTOR 3P	
C716	1-162-970-11	CERAMIC 0.01uF 10%	25V	CN703	*1-580-056-21	PIN, CONNECTOR 3P	
C717	1-164-360-11	CERAMIC 0.1uF	16V	CN704	*1-580-056-21	PIN, CONNECTOR 3P	
C718	1-162-970-11	CERAMIC 0.01uF 10%	25V	CN705	1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P	
C719	1-162-970-11	CERAMIC 0.01uF 10%	25V	CN706	1-566-523-11	CONNECTOR, FPC (ZIF) 7P	
C720	1-164-360-11	CERAMIC 0.1uF	16V	CN707	1-506-481-11	PIN, CONNECTOR 2P	
C721	1-164-360-11	CERAMIC 0.1uF	16V	CN708	1-506-481-11	PIN, CONNECTOR 2P	
C722	1-164-360-11	CERAMIC 0.1uF	16V	CN709	1-506-485-11	PIN, CONNECTOR 6P	
C723	1-162-970-11	CERAMIC 0.01uF 10%	25V	CN710	1-569-775-21	PIN, CONNECTOR 5P	
C724	1-162-970-11	CERAMIC 0.01uF 10%	25V	CN711	1-569-775-21	PIN, CONNECTOR 5P	
C725	1-162-970-11	CERAMIC 0.01uF 10%	25V	CN712	1-506-481-11	PIN, CONNECTOR 2P	
C726	1-162-970-11	CERAMIC 0.01uF 10%	25V	CN713	1-569-775-21	PIN, CONNECTOR 5P	
C727	1-162-970-11	CERAMIC 0.01uF 10%	25V	CN714	1-566-532-11	CONNECTOR, FPC (ZIF) 16P	
C728	1-162-970-11	CERAMIC 0.01uF 10%	25V	CN715	1-566-526-11	CONNECTOR, FPC (ZIF) 10P	
C729	1-162-970-11	CERAMIC 0.01uF 10%	25V	CN716	1-506-494-11	PIN, CONNECTOR 15P	
C734	1-164-360-11	CERAMIC 0.1uF	16V	CN717	1-566-528-21	CONNECTOR, FPC (ZIF) 12P	
C735	1-165-112-11	CERAMIC 0.33uF	16V	CN718	*1-580-056-21	PIN, CONNECTOR 3P	
C736	1-162-970-11	CERAMIC 0.01uF 10%	25V	CN719	1-506-481-11	PIN, CONNECTOR 2P	
C737	1-126-204-11	ELECT 47uF 20%	16V	CN722	*1-580-055-21	PIN, CONNECTOR 2P	
C738	1-165-112-11	CERAMIC 0.33uF	16V	CN723	*1-580-056-21	PIN, CONNECTOR 3P	
C739	1-135-166-21	TANTAL 47uF 20%	6.3V	CN724	1-580-265-11	CONNECTOR, BOARD TO BOARD 16P	
C740	1-165-112-11	CERAMIC 0.33uF	16V	CN725	1-506-481-11	PIN, CONNECTOR 2P	
C741	1-165-112-11	CERAMIC 0.33uF	16V	<DIODE>			
C742	1-126-204-11	ELECT 47uF 20%	16V	D701	8-719-200-02	DIODE 10E2	
C744	1-165-112-11	CERAMIC 0.33uF	16V	D702	8-719-200-02	DIODE 10E2	
C746	1-165-112-11	CERAMIC 0.33uF	16V	D703	8-719-104-34	DIODE 1S2836	
C747	1-164-360-11	CERAMIC 0.1uF	16V	D704	8-719-104-34	DIODE 1S2836	
C749	1-165-112-11	CERAMIC 0.33uF	16V	D705	8-719-104-34	DIODE 1S2836	
C750	1-165-112-11	CERAMIC 0.33uF	16V	D706	8-719-104-34	DIODE 1S2836	
C751	1-162-970-11	CERAMIC 0.01uF 10%	25V	D707	8-719-104-34	DIODE 1S2836	
C752	1-162-970-11	CERAMIC 0.01uF 10%	25V	D709	8-719-104-34	DIODE 1S2836	
C753	1-126-204-11	ELECT 47uF 20%	16V	D711	8-719-104-34	DIODE 1S2836	
C754	1-162-945-11	CERAMIC 22PF 5%	50V	<FUSE>			
C755	1-162-945-11	CERAMIC 22PF 5%	50V	F1	1-532-777-21	FUSE, MICRO (SECONDARY)	
C756	1-165-112-11	CERAMIC 0.33uF	16V	<IC>			
C757	1-162-970-11	CERAMIC 0.01uF 10%	25V	IC701	8-759-154-84	IC HDC443V2	
C758	1-162-970-11	CERAMIC 0.01uF 10%	25V	IC702	8-759-053-58	IC IDT6116SA25S0	
C759	1-162-970-11	CERAMIC 0.01uF 10%	25V	IC703	8-759-053-58	IC IDT6116SA25S0	
C760	1-162-970-11	CERAMIC 0.01uF 10%	25V	IC704	*8-759-258-59	IC M5M27C101FP-UP12G-E2	
C761	1-162-970-11	CERAMIC 0.01uF 10%	25V	IC706	8-759-998-98	IC LM358D	
C762	1-162-970-11	CERAMIC 0.01uF 10%	25V	IC707	8-759-100-97	IC UPC339G2	
C763	1-162-970-11	CERAMIC 0.01uF 10%	25V	IC708	*8-752-838-97	IC CXP80P116Q-1-UP1800E	
C764	1-162-970-11	CERAMIC 0.01uF 10%	25V	IC709	8-759-157-19	IC MB3863PF-G-BND	
C765	1-162-970-11	CERAMIC 0.01uF 10%	25V				



The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

# HM-22P(L)

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
IC710	8-759-925-74	IC SN74HC04ANS		R737	1-216-841-11	METAL 47K 5%	1/16W
IC711	8-759-100-97	IC UPC339G2		R738	1-216-841-11	METAL 47K 5%	1/16W
IC712	8-759-100-97	IC UPC339G2		R739	1-216-841-11	METAL 47K 5%	1/16W
IC713	8-759-927-46	IC SN74HC00ANS		R740	1-216-837-11	METAL 22K 5%	1/16W
IC714	8-759-242-70	IC TC7WU04F		R741	1-216-841-11	METAL 47K 5%	1/16W
<INDUCTOR>				R742	1-216-864-11	METAL 0 5%	1/16W
L701	1-424-090-11	COIL, LINE FILTER		R744	1-216-837-11	METAL 22K 5%	1/16W
L702	1-424-090-11	COIL, LINE FILTER		R746	1-216-841-11	METAL 47K 5%	1/16W
L703	1-424-090-11	COIL, LINE FILTER		R747	1-216-849-11	METAL 220K 5%	1/16W
L704	1-412-390-21	INDUCTOR CHIP OUH		R748	1-216-833-11	METAL 10K 5%	1/16W
L705	1-412-390-21	INDUCTOR CHIP OUH		R750	1-216-841-11	METAL 47K 5%	1/16W
L706	1-412-390-21	INDUCTOR CHIP OUH		R751	1-216-833-11	METAL 10K 5%	1/16W
L707	1-412-390-21	INDUCTOR CHIP OUH		R752	1-216-833-11	METAL 10K 5%	1/16W
<TRANSISTOR>				R753	1-216-813-11	METAL 220 5%	1/16W
Q701	8-729-901-04	TRANSISTOR DTA114EK		R754	1-216-837-11	METAL 22K 5%	1/16W
Q702	8-729-901-00	TRANSISTOR DTC124EK		R755	1-216-841-11	METAL 47K 5%	1/16W
Q703	8-729-114-48	TRANSISTOR 2SB962-Z-P		R756	1-216-849-11	METAL 220K 5%	1/16W
Q705	8-729-017-80	TRANSISTOR 2SD992-Z		R757	1-216-833-11	METAL 10K 5%	1/16W
Q706	8-729-017-80	TRANSISTOR 2SD992-Z		R758	1-216-821-11	METAL 1K 5%	1/16W
Q707	8-729-017-80	TRANSISTOR 2SD992-Z		R760	1-216-813-11	METAL 220 5%	1/16W
Q708	8-729-017-80	TRANSISTOR 2SD992-Z		R761	1-216-837-11	METAL 22K 5%	1/16W
Q709	8-729-140-75	TRANSISTOR 2SD999-CLKK		R762	1-216-841-11	METAL 47K 5%	1/16W
Q710	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R763	1-216-821-11	METAL 1K 5%	1/16W
Q711	8-729-120-28	TRANSISTOR 2SC1623-L5L6		R764	1-216-849-11	METAL 220K 5%	1/16W
<RESISTOR>				R765	1-216-833-11	METAL 10K 5%	1/16W
R701	1-216-829-11	METAL 4.7K 5%	1/16W	R766	1-216-839-11	METAL 33K 5%	1/16W
R702	1-216-829-11	METAL 4.7K 5%	1/16W	R767	1-216-821-11	METAL 1K 5%	1/16W
R703	1-216-829-11	METAL 4.7K 5%	1/16W	R768	1-216-821-11	METAL 1K 5%	1/16W
R704	1-216-829-11	METAL 4.7K 5%	1/16W	R769	1-216-841-11	METAL 47K 5%	1/16W
R705	1-216-818-11	METAL 560 5%	1/16W	R770	1-216-841-11	METAL 47K 5%	1/16W
R706	1-216-818-11	METAL 560 5%	1/16W	R771	1-216-841-11	METAL 47K 5%	1/16W
R707	1-216-818-11	METAL 560 5%	1/16W	R772	1-216-841-11	METAL 47K 5%	1/16W
R708	1-216-818-11	METAL 560 5%	1/16W	R773	1-216-841-11	METAL 47K 5%	1/16W
R709	1-216-813-11	METAL 220 5%	1/16W	R774	1-216-841-11	METAL 47K 5%	1/16W
R710	1-216-813-11	METAL 220 5%	1/16W	R775	1-216-841-11	METAL 47K 5%	1/16W
R711	1-216-813-11	METAL 220 5%	1/16W	R776	1-216-841-11	METAL 47K 5%	1/16W
R712	1-216-813-11	METAL 220 5%	1/16W	R777	1-216-841-11	METAL 47K 5%	1/16W
R713	$\Delta$ 1-215-930-11	METAL 10 5%	5W	R778	1-216-841-11	METAL 47K 5%	1/16W
R715	$\Delta$ 1-215-930-11	METAL 10 5%	5W	R779	1-216-813-11	METAL 220 5%	1/16W
R716	1-216-841-11	METAL 47K 5%	1/16W	R780	1-216-813-11	METAL 220 5%	1/16W
R717	1-216-819-11	METAL 680 5%	1/16W	R781	1-216-813-11	METAL 220 5%	1/16W
R718	1-216-809-11	METAL 100 5%	1/16W	R782	1-216-813-11	METAL 220 5%	1/16W
R719	1-260-099-11	CARBON 1K 5%	1/2W	R783	1-216-813-11	METAL 220 5%	1/16W
R720	1-216-833-11	METAL 10K 5%	1/16W	R784	1-216-813-11	METAL 220 5%	1/16W
R721	1-216-825-11	METAL 2.2K 5%	1/16W	R785	1-216-813-11	METAL 220 5%	1/16W
R722	1-216-815-11	METAL 330 5%	1/16W	R786	1-216-813-11	METAL 220 5%	1/16W
R723	1-216-831-11	METAL 6.8K 5%	1/16W	R787	1-216-813-11	METAL 220 5%	1/16W
R724	1-216-864-11	METAL 0 5%	1/16W	R788	1-216-813-11	METAL 220 5%	1/16W
R725	1-216-840-11	METAL 39K 5%	1/16W	R789	1-216-837-11	METAL 22K 5%	1/16W
R726	1-216-818-11	METAL 560 5%	1/16W	R789	1-216-839-11	METAL 33K 5%	1/16W
R727	1-216-813-11	METAL 220 5%	1/16W	R790	1-216-839-11	METAL 33K 5%	1/16W
R728	1-216-839-11	METAL 33K 5%	1/16W	R791	1-216-813-11	METAL 220 5%	1/16W
R729	1-216-841-11	METAL 47K 5%	1/16W	R792	1-216-813-11	METAL 220 5%	1/16W
R730	1-216-835-11	METAL 15K 5%	1/16W	R793	1-216-838-11	METAL 27K 5%	1/16W
R731	1-216-849-11	METAL 220K 5%	1/16W	R794	1-216-838-11	METAL 27K 5%	1/16W
R732	1-216-833-11	METAL 10K 5%	1/16W	R795	1-216-821-11	METAL 1K 5%	1/16W
R733	1-216-839-11	METAL 33K 5%	1/16W	R796	1-216-821-11	METAL 1K 5%	1/16W
R734	1-216-840-11	METAL 39K 5%	1/16W	R797	1-216-837-11	METAL 22K 5%	1/16W
R735	1-216-831-11	METAL 6.8K 5%	1/16W	R799	1-216-813-11	METAL 220 5%	1/16W
R736	1-216-841-11	METAL 47K 5%	1/16W	R800	1-216-813-11	METAL 220 5%	1/16W
R801	1-216-838-11	METAL 27K 5%	1/16W	R802	1-216-838-11	METAL 27K 5%	1/16W
R803	1-216-821-11	METAL 1K 5%	1/16W	R804	1-216-821-11	METAL 1K 5%	1/16W
R804	1-216-821-11	METAL 1K 5%	1/16W	R805	1-216-849-11	METAL 220K 5%	1/16W



HM-22P(L)

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R806	1-216-849-11	METAL 220K 5%	1/16W	R880	1-216-841-11	METAL 47K 5%	1/16W
R807	1-216-849-11	METAL 220K 5%	1/16W	R881	1-216-841-11	METAL 47K 5%	1/16W
R808	1-216-849-11	METAL 220K 5%	1/16W	R882	1-216-841-11	METAL 47K 5%	1/16W
R809	1-216-837-11	METAL 22K 5%	1/16W	R883	1-216-841-11	METAL 47K 5%	1/16W
R810	1-216-829-11	METAL 4.7K 5%	1/16W	R884	1-216-841-11	METAL 47K 5%	1/16W
R811	1-216-833-11	METAL 10K 5%	1/16W	R885	1-216-841-11	METAL 47K 5%	1/16W
R812	1-216-833-11	METAL 10K 5%	1/16W	R886	1-216-857-11	METAL 1M 5%	1/16W
R813	1-216-833-11	METAL 10K 5%	1/16W	R887	1-216-857-11	METAL 1M 5%	1/16W
R814	1-216-833-11	METAL 10K 5%	1/16W	R888	1-216-841-11	METAL 47K 5%	1/16W
R815	1-216-833-11	METAL 10K 5%	1/16W	R889	1-216-841-11	METAL 47K 5%	1/16W
R816	1-216-833-11	METAL 10K 5%	1/16W	R891	1-216-819-11	METAL 680 5%	1/16W
R817	1-216-829-11	METAL 4.7K 5%	1/16W	R892	1-216-841-11	METAL 47K 5%	1/16W
R818	1-216-829-11	METAL 4.7K 5%	1/16W	R893	1-216-817-11	METAL 470 5%	1/16W
R819	1-216-829-11	METAL 4.7K 5%	1/16W	R895	1-216-864-11	METAL 0 5%	1/16W
R820	1-216-829-11	METAL 4.7K 5%	1/16W	R896	1-216-813-11	METAL 220 5%	1/16W
R822	1-216-829-11	METAL 4.7K 5%	1/16W	R897	1-216-813-11	METAL 220 5%	1/16W
R823	1-216-829-11	METAL 4.7K 5%	1/16W	R898	1-216-813-11	METAL 220 5%	1/16W
R824	1-216-829-11	METAL 4.7K 5%	1/16W	R899	1-216-813-11	METAL 220 5%	1/16W
R825	1-216-829-11	METAL 4.7K 5%	1/16W	R900	1-216-813-11	METAL 220 5%	1/16W
R826	1-216-841-11	METAL 47K 5%	1/16W	R901	1-216-813-11	METAL 220 5%	1/16W
R827	1-216-841-11	METAL 47K 5%	1/16W	R902	1-216-813-11	METAL 220 5%	1/16W
R828	1-216-841-11	METAL 47K 5%	1/16W			<SWITCH>	
R829	1-216-841-11	METAL 47K 5%	1/16W	S705	1-692-088-41	SWITCH, TACTILE	
R830	1-216-839-11	METAL 33K 5%	1/16W	S706	1-571-684-11	SWITCH, TACTIL	
R831	1-216-837-11	METAL 22K 5%	1/16W			<THERMISTOR>	
R832	1-216-833-11	METAL 10K 5%	1/16W	TH701	1-809-357-21	THERMISTOR, NTC (2125)	
R833	1-216-841-11	METAL 47K 5%	1/16W			<CRYSTAL>	
R834	1-216-841-11	METAL 47K 5%	1/16W	X701	1-579-906-21	VIBRATOR, CERAMIC	
R835	1-216-841-11	METAL 47K 5%	1/16W	X702	1-579-070-41	VIBRATOR, CRYSTAL	
R837	1-216-813-11	METAL 220 5%	1/16W	X703	1-579-905-21	VIBRATOR, CERAMIC	
R838	1-216-841-11	METAL 47K 5%	1/16W			*****	
R839	1-216-841-11	METAL 47K 5%	1/16W			*A-8275-446-A	IF-27 BOARD, COMPLETE
R840	1-216-821-11	METAL 1K 5%	1/16W			*****	
R841	1-216-849-11	METAL 220K 5%	1/16W			1-562-261-41	CONNECTOR, COAXIAL (BNC)
R842	1-216-833-11	METAL 10K 5%	1/16W			7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S
R843	1-216-839-11	METAL 33K 5%	1/16W			7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3
R844	1-216-837-11	METAL 22K 5%	1/16W			3-531-576-11	RIVET
R846	1-216-813-11	METAL 220 5%	1/16W				<CAPACITOR>
R847	1-216-841-11	METAL 47K 5%	1/16W			C1	1-163-009-11 CERAMIC 0.001uF 10% 50V
R848	1-216-841-11	METAL 47K 5%	1/16W			C2	1-163-038-00 CERAMIC 0.1uF 25V
R849	1-216-821-11	METAL 1K 5%	1/16W			C3	1-124-589-11 ELECT 47uF 20% 16V
R850	1-216-849-11	METAL 220K 5%	1/16W				<CONNECTOR>
R851	1-216-833-11	METAL 10K 5%	1/16W			CN1	1-506-486-11 PIN, CONNECTOR 7P
R852	1-216-839-11	METAL 33K 5%	1/16W			CN2	1-506-485-11 PIN, CONNECTOR 6P
R853	1-216-837-11	METAL 22K 5%	1/16W			CN3	1-564-014-11 PIN, CONNECTOR 4P
R854	1-216-821-11	METAL 1K 5%	1/16W			CN4	1-506-483-21 PIN, CONNECTOR 4P
R855	1-216-841-11	METAL 47K 5%	1/16W				<DIODE>
R856	1-216-839-11	METAL 33K 5%	1/16W			D1	8-719-801-78 DIODE 1SS184
R857	1-216-815-11	METAL 330 5%	1/16W			D2	8-719-108-12 DIODE RD9.1E-W
R858	1-216-841-11	METAL 47K 5%	1/16W			D3	8-719-108-12 DIODE RD9.1E-W
R859	1-216-821-11	METAL 1K 5%	1/16W			D4	8-719-108-12 DIODE RD9.1E-W
R860	1-216-849-11	METAL 220K 5%	1/16W			D5	8-719-108-12 DIODE RD9.1E-W
R861	1-216-833-11	METAL 10K 5%	1/16W			D6	8-719-108-12 DIODE RD9.1E-W
R862	1-216-839-11	METAL 33K 5%	1/16W			D7	8-719-108-12 DIODE RD9.1E-W
R863	1-216-837-11	METAL 22K 5%	1/16W			D8	8-719-800-76 DIODE 1SS226
R866	1-216-821-11	METAL 1K 5%	1/16W			D9	8-719-800-76 DIODE 1SS226
R867	1-216-821-11	METAL 1K 5%	1/16W				
R868	1-216-829-11	METAL 4.7K 5%	1/16W				
R869	1-216-821-11	METAL 1K 5%	1/16W				
R870	1-216-821-11	METAL 1K 5%	1/16W				
R871	1-216-821-11	METAL 1K 5%	1/16W				
R872	1-216-821-11	METAL 1K 5%	1/16W				
R873	1-216-841-11	METAL 47K 5%	1/16W				
R874	1-216-841-11	METAL 47K 5%	1/16W				
R879	1-216-809-11	METAL 100 5%	1/16W				

IF-27	KY-15	PTC-27	SU-10
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Ref.No	Part No.	Description	Remark
<FILTER>			
FL1	1-236-738-11	FILTER, EMI	
FL2	1-236-738-11	FILTER, EMI	
FL3	1-236-738-11	FILTER, EMI	
FL4	1-236-738-11	FILTER, EMI	
FL5	1-236-738-11	FILTER, EMI	
FL6	1-236-738-11	FILTER, EMI	
FL7	1-236-738-11	FILTER, EMI	
FL8	1-236-738-11	FILTER, EMI	
FL9	1-236-738-11	FILTER, EMI	
<JACK>			
J3	1-569-803-11	CONNECTOR, (S) TERMINAL 4P	
J4	1-569-803-11	CONNECTOR, (S) TERMINAL 4P	
J5	1-507-792-00	JACK	
<JUMPER>			
JR4	1-216-295-00	METAL GLAZE 0 5% 1/10W	
<TRANSISTOR>			
Q1	8-729-901-01	TRANSISTOR DTC144EK	
Q2	8-729-140-75	TRANSISTOR 2SD999-CLCK	
<RESISTOR>			
R1	1-216-631-11	METAL 150 0.50% 1/10W	
R2	1-216-631-11	METAL 150 0.50% 1/10W	
R3	1-216-631-11	METAL 150 0.50% 1/10W	
R4	1-216-631-11	METAL 150 0.50% 1/10W	
R5	1-216-631-11	METAL 150 0.50% 1/10W	
R6	1-216-631-11	METAL 150 0.50% 1/10W	
R7	1-216-049-00	METAL 1K 5% 1/10W	
R8	1-216-089-91	METAL 47K 5% 1/10W	
R9	1-216-025-00	METAL 100 5% 1/10W	
<RELAY>			
RL1	1-515-622-11	RELAY	
RL2	1-515-622-11	RELAY	
RL3	1-515-622-11	RELAY	
<SWITCH>			
S1	1-572-084-11	SWITCH, SLIDE	
*****			
*A-8275-438-A KY-15 BOARD, COMPLETE			
*****			
<CAPACITOR>			
C803	1-163-038-00	CERAMIC 0.1uF 25V	
C804	1-163-009-11	CERAMIC 0.001uF 10% 50V	
C805	1-163-038-00	CERAMIC 0.1uF 25V	
C807	1-163-031-11	CERAMIC 0.01uF 50V	
<CONNECTOR>			
CN801	*1-506-486-11	PIN, CONNECTOR 7P	
CN802	*1-506-486-11	PIN, CONNECTOR 7P	
CN803	1-506-493-11	PIN, CONNECTOR 14P	
CN804	1-506-481-11	PIN, CONNECTOR 2P	
CN805	*1-563-863-21	SOCKET, CONNECTOR 26P	
CN806	1-506-484-11	PIN, CONNECTOR 5P	
<DIODE>			
D802	8-719-800-76	DIODE 1SS226	

Ref.No	Part No.	Description	Remark
<IC>			
IC802	8-759-100-93	IC UPC393G2	
<JUMPER>			
JR822	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR829	1-216-295-00	METAL GLAZE 0 5% 1/10W	
<TRANSISTOR>			
Q801	8-729-900-53	TRANSISTOR DTC114EK	
Q802	8-729-900-53	TRANSISTOR DTC114EK	
<RESISTOR>			
R801	1-216-033-00	METAL 220 5% 1/10W	
R802	1-216-033-00	METAL 220 5% 1/10W	
R803	1-216-033-00	METAL 220 5% 1/10W	
R804	1-216-033-00	METAL 220 5% 1/10W	
R805	1-216-033-00	METAL 220 5% 1/10W	
R806	1-216-033-00	METAL 220 5% 1/10W	
R807	1-216-033-00	METAL 220 5% 1/10W	
R808	1-216-033-00	METAL 220 5% 1/10W	
R809	1-216-033-00	METAL 220 5% 1/10W	
R810	1-216-033-00	METAL 220 5% 1/10W	
R812	1-216-049-00	METAL 1K 5% 1/10W	
R813	1-216-081-00	METAL 22K 5% 1/10W	
R814	1-216-073-00	METAL 10K 5% 1/10W	
R815	1-216-073-00	METAL 10K 5% 1/10W	
R816	1-216-049-00	METAL 1K 5% 1/10W	
R817	1-216-033-00	METAL 220 5% 1/10W	
R818	1-216-295-00	METAL 0 5% 1/10W	
R819	1-216-295-00	METAL 0 5% 1/10W	
R820	1-216-295-00	METAL 0 5% 1/10W	
R821	1-216-295-00	METAL 0 5% 1/10W	
*****			
*A-8275-451-A PTC-27 BOARD, COMPLETE			
*****			
<CAPACITOR>			
C801	1-124-229-00	ELECT 33uF 20% 6.3	
<CONNECTOR>			
CN816	1-506-468-11	PIN, CONNECTOR 3P	
CN817	1-506-470-11	PIN, CONNECTOR 5P	
<IC>			
IC801	8-748-015-08	RAY CATCHER ELEMENT SBX8015-H	
<RESISTOR>			
R811	1-216-029-00	METAL 150 5% 1/10W	
*****			
*1-650-853-13 SU-10 BOARD			
*****			
<CAPACITOR>			
C905	1-165-319-11	CERAMIC 0.1uF 50V	
<CONNECTOR>			
CN916	*1-506-481-11	PIN, CONNECTOR 2P	
*****			

S-25		SW-39		SW-41		SW-42		SW-208		SW-210		SW-211		SW-212			
Ref.No	Part No.	Description						Remark	Ref.No	Part No.	Description						Remark
	*A-8275-437-A	S-25 BOARD, COMPLETE *****									<PHOTO INTERRUPTER>						
		<CONNECTOR>							PH803	8-749-923-97	PHOTO INTERRUPTER GP2S40K						
		<DIODE>									<SWITCH>						
CN811	1-506-481-11	PIN, CONNECTOR 2P							S803	1-572-126-21	SWITCH, PUSH (1 KEY)						
D803	8-719-975-79	DIODE SLP255B-51-A							*****								
		<RESISTOR>									*A-8275-434-A SW-211 BOARD, COMPLETE *****						
		<CONNECTOR>									<PHOTO INTERRUPTER>						
R830	1-216-029-00	METAL	150	5%	1/10W	*****											
		*****							PH804	8-749-923-97	PHOTO INTERRUPTER GP2S40K						
		*****							PH805	8-749-923-97	PHOTO INTERRUPTER GP2S40K						
		*****									<HARNESSE>						
		<CONNECTOR>							W801	1-648-128-11	PC BOARD, FP-38 FLEXIBLE						
CN913	1-506-482-11	PIN, CONNECTOR 3P							*****								
		<PHOTO INTERRUPTER>									*A-8275-436-A SW-212 BOARD, COMPLETE *****						
PH901	8-749-923-97	PHOTO INTERRUPTER GP2S40K									<CAPACITOR>						
		*****							C810	1-124-779-00	ELECT	10uF	20%	16V			
		*****							C811	1-164-004-11	CERAMIC	0.1uF	10%	25V			
		*****							C812	1-163-038-00	CERAMIC	0.1uF		25V			
		*****							C813	1-128-530-11	ELECT	33uF	20%	10V			
		*****							C814	1-126-200-11	ELECT	10uF	20%	16V			
		*****							C815	1-164-004-11	CERAMIC	0.1uF	10%	25V			
		*****									<CONNECTOR>						
		*****							CN806	1-569-775-11	PIN, CONNECTOR (SMD) 5P						
		*****							CN811	1-580-057-11	PIN, CONNECTOR 4P						
		*****							CN813	*1-580-056-21	PIN, CONNECTOR (SMD) 3P						
		*****							CN814	*1-580-055-21	PIN, CONNECTOR 2P						
		*****									<DIODE>						
		*****							D802	8-719-421-15	DIODE MA8027-L						
		*****									<IC>						
		*****							IC810	8-759-998-98	IC LM358D						
		*****									<PHOTO INTERRUPTER>						
		*****							PH806	8-749-923-97	PHOTO INTERRUPTER GP2S40K						
		*****							PH807	8-749-923-97	PHOTO INTERRUPTER GP2S40K						
		*****									<RESISTOR>						
		*****							R802	1-216-295-00	METAL	0	5%	1/10W			
		*****							R810	1-216-073-00	METAL	10K	5%	1/10W			
		*****							R811	1-216-065-00	METAL	4.7K	5%	1/10W			
		*****							R812	1-216-073-00	METAL	10K	5%	1/10W			
		*****							R813	1-216-089-91	METAL	47K	5%	1/10W			
		*****							R814	1-216-089-91	METAL	47K	5%	1/10W			
		*****							R815	1-216-065-00	METAL	4.7K	5%	1/10W			
		*****							R816	1-216-073-00	METAL	10K	5%	1/10W			
		*****							R817	1-216-089-91	METAL	47K	5%	1/10W			
		*****							R818	1-216-089-91	METAL	47K	5%	1/10W			
		*****							R819	1-216-083-00	METAL	27K	5%	1/10W			
		*****							R820	1-216-033-00	METAL	220	5%	1/10W			
		*****							R821	1-216-295-00	METAL	0	5%	1/10W			
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<b>SW-213</b>	<b>SW-214</b>	<b>SW-215</b>	<b>SW-216</b>	<b>SW-217</b>	<b>SWITCHING REGULATOR</b>
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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
	*A-8275-441-A	SW-213 BOARD, COMPLETE *****		C108	9-900-525-01	CERAMIC 0.047MF	400V
	*3-949-924-01	HOLDER, P SENSOR <CONNECTOR>		C109	9-907-098-01	CERAMIC 220PF	1KV
CN808	1-569-775-21	PIN, CONNECTOR 5P <PHOTO INTERRUPTER>		C110	1-130-491-00	CERAMIC 0.047MF	50V
PH808	8-749-923-97	PHOTO INTERRUPTER GP2S40K		C111	1-124-122-11	ELECT 100MF	50V
PH809	8-749-923-97	PHOTO INTERRUPTER GP2S40K		C112	1-126-967-11	ELECT 47MF	50V
*****				C113	9-900-525-01	CERAMIC 0.047MF	400V
	*A-8275-453-A	SW-214 BOARD *****		C114	9-907-098-01	CERAMIC 220PF	1KV
		<CONNECTOR>		C115	1-128-578-91	ELECT 1MF	100V
CN809	1-580-055-21	PIN, CONNECTOR 2P <SWITCH>		C116	1-130-495-00	FILM 0.1MF	50V
S801	1-570-407-11	SWITCH, SLIDE		C118	9-907-095-01	CERAMIC 2200PF	250V
*****				C119	9-907-095-01	CERAMIC 2200PF	250V
	*A-8275-435-A	SW-215 BOARD *****		C120	9-907-096-01	CERAMIC 4700PF	250V
		<CONNECTOR>		C121	9-907-097-01	ELECT 470MF	200V
	*A-8275-440-A	SW-216 BOARD *****		C122	1-130-491-00	CERAMIC 0.047MF	50V
		<CONNECTOR>		C123	1-136-189-00	CERAMIC 0.1MF	250V
	*A-8275-452-A	SW-217 BOARD, COMPLETE *****		C124	1-136-189-00	CERAMIC 0.1MF	250V
		<CONNECTOR>		C125	9-907-099-01	ELECT 4.7MF	400V
CN810	*1-580-056-21	PIN, CONNECTOR (SMD) 3P <PHOTO INTERRUPTER>		C126	1-124-903-11	ELECT 1MF	50V
PH810	8-749-923-97	PHOTO INTERRUPTER GP2S40K		C201	9-907-113-01	CERAMIC 1000PF	1KV
*****				C202	9-907-114-01	ELECT 1000MF	35V
	△#1-413-946-11	SWITCHING, REGULATOR *****		C203	1-124-906-11	ELECT 4.7MF	50V
	9-904-821-01	FUSE CLIP		C204	9-907-114-01	ELECT 1000MF	35V
	*9-907-116-01	HEAT SINK (IC101, IC102)		C205	1-126-965-51	ELECT 22MF	50V
	*9-907-117-01	HEAT SINK (IC103)		C207	1-130-483-00	FILM 0.01MF	50V
	*9-907-118-01	HEAT SINK (IC205-IC208)		C208	9-907-113-01	CERAMIC 1000PF	1KV
	*9-907-119-01	PC BOARD		C209	1-126-927-11	ELECT 2200MF	10V
	9-907-120-01	SPACER		C210	1-126-927-11	ELECT 2200MF	10V
	*9-907-121-01	SHEET, INSULATING		C211	1-124-903-11	ELECT 1MF	50V
	*9-907-122-01	SHEET, INSULATING		C212	1-126-926-11	ELECT 1000MF	10V
		<CAPACITOR>		C213	1-126-933-11	ELECT 100MF	10V
C101	1-136-192-11	CERAMIC 0.33MF	250V	C214	1-126-933-11	ELECT 100MF	10V
C102	9-902-038-01	CERAMIC 0.22MF	250V	C215	9-907-113-01	CERAMIC 1000PF	1KV
C103	9-907-095-01	CERAMIC 2200PF	2500	C216	1-124-557-11	ELECT 1000MF	25V
C104	9-907-095-01	CERAMIC 2200PF	2500	C217	1-216-933-11	ELECT 100MF	16V
C105	9-907-096-01	CERAMIC 4700PF	250V	C218	1-126-926-11	ELECT 1000MF	10V
C106	9-907-097-01	ELECT 470MF	200V	C219	1-126-933-11	ELECT 100MF	10V
C107	9-900-522-01	CERAMIC 2200PF	250V	C220	1-130-483-00	FILM 0.01MF	50V
				C222	1-124-122-11	ELECT 100MF	50V
						<CONNECTOR>	
				CN1	9-907-104-01	CONNECTOR 4P	
				CN2	9-907-105-01	CONNECTOR 2P	
				CN3	9-907-105-01	CONNECTOR 2P	
				CN901	1-560-892-00	CONNECTOR 4P	
				CN902	1-560-894-00	CONNECTOR 6P	
				CN903	1-568-792-11	CONNECTOR 15P	
				CN904	1-506-468-11	CONNECTOR 3P	
				CN905	1-506-468-11	CONNECTOR 3P	
				CN906	1-564-013-31	CONNECTOR 3P	
				CN907	1-568-779-11	CONNECTOR 2P	
						<DIODE>	
				D101	8-719-500-58	DIODE D3SBA60	
				D102	8-719-030-25	DIODE AG01A	
				D103	9-904-898-01	DIODE AU02A	
				D104	9-907-090-01	DIODE RD47E	
				D105	8-719-116-86	DIODE RD24JSB	
				D106	8-719-200-02	DIODE 10E-2	
				D107	9-900-514-01	DIODE MA165	
				D108	9-902-050-01	DIODE ERA15-16	
				D109	9-900-514-01	DIODE MA165	
				D110	9-902-050-01	DIODE ERA15-16	

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

# SWITCHING REGULATOR

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
D111	9-902-050-01	DIODE ERA15-16		R111	9-907-094-01	CARBON 1	1/2W
D201	8-719-501-34	DIODE S3VC40R		R112	1-260-080-11	CARBON 27	1/2W
D202	8-719-501-34	DIODE S3VC40R		R113	1-247-855-31	CARBON 10K	1/4W
D203	8-719-200-02	DIODE 10E-2		R114	1-249-412-11	CARBON 390	1/4W
D204	9-900-535-01	DIODE AU02Z		R115	1-249-437-11	CARBON 47K	1/4W
D205	9-904-797-01	DIODE RK44		R116	1-249-411-11	CARBON 330	1/4W
D206	9-904-797-01	DIODE RK44		R117	1-249-423-11	CARBON 3.3K	1/4W
D207	8-719-501-34	DIODE S3VC40R		R118	1-247-883-00	CARBON 150K	1/4W
D208	8-719-160-68	DIODE RD18F		R119	1-247-883-00	CARBON 150K	1/4W
D209	8-719-982-04	DIODE ERB81-004		R120	1-249-441-11	CARBON 100K	1/4W
D210	9-904-799-01	DIODE MA2120		R121	1-215-928-11	FILM 68K	3W
		<FUSE>		R122	1-215-928-11	FILM 68K	3W
F101	9-907-103-01	FUSE 4A 250V		R123	1-215-863-11	CARBON 100	1W
F102	9-907-103-01	FUSE 4A 250V		R124	1-215-863-11	CARBON 100	1W
		<IC>		R125	1-260-091-11	CARBON 220	1/2W
IC101	9-904-782-01	IC STR-S6525		R126	9-904-783-01	THERMISTOR 5	25°C
IC102	8-759-977-63	IC MA2830		R127	1-260-127-11	CARBON 220K	1/2W
IC103	8-749-923-66	IC STR83145		R128	1-260-127-11	CARBON 220K	1/2W
IC201	8-759-420-19	IC AN1431T		R129	1-249-389-11	CARBON 4.7	1/4W
IC202	8-759-135-80	IC UPC358C		R130	1-247-883-00	CARBON 150K	1/4W
IC203	8-759-420-19	IC AN1431T		R131	1-249-408-11	CARBON 180	1/4W
IC204	8-759-420-19	IC AN1431T		R132	1-249-441-11	CARBON 100K	1/4W
IC205	8-749-920-43	IC SI-3050CA		R201	1-215-916-00	FILM 680	3W
IC206	8-749-921-21	IC SI-3120C		R202	1-215-916-00	FILM 680	3W
IC207	8-749-920-43	IC SI-3050CA		R203	1-260-099-11	CARBON 1K	1/2W
IC208	8-749-920-43	IC SI-3050CA		R204	1-247-855-31	CARBON 10K	1/4W
		<COIL>		R205	1-247-855-31	CARBON 10K	1/4W
L101	9-907-102-01	FILTER		R206	1-249-420-11	CARBON 1.8K	1/4W
L102	9-907-102-01	FILTER		R207	1-244-417-11	CARBON 1K	1/4W
L103	9-904-796-01	BEAD CORE		R208	1-249-423-11	CARBON 3.3K	1/4W
L104	9-904-796-01	BEAD CORE		R209	1-249-415-11	CARBON 680	1/2W
L201	9-902-553-01	BEAD CORE		R210	9-902-556-01	METAL 1	1/4W
L202	9-902-553-01	BEAD CORE		R211	1-247-855-31	CARBON 10K	1/4W
L203	9-907-112-01	CHOKE COIL		R212	9-904-801-01	FILM 8.25K	1/4W
L204	9-902-553-01	BEAD CORE		R213	1-247-855-31	CARBON 10K	1/4W
L205	9-907-112-01	CHOKE COIL		R214	1-247-855-31	CARBON 10K	1/4W
L206	9-902-553-01	BEAD CORE		R215	1-247-855-31	CARBON 10K	1/4W
		<PHOTO COUPLER>		R216	1-247-855-31	CARBON 10K	1/4W
PC101	9-907-091-01	PHOTO COUPLER PC111		R217	1-249-425-11	CARBON 4.7K	1/4W
PC102	9-907-091-01	PHOTO COUPLER PC111		R218	1-247-855-31	CARBON 10K	1/4W
PC201	8-719-161-00	PHOTO COUPLER PS2501		R219	1-247-855-31	CARBON 10K	1/4W
		<TRANSISTOR>		R220	1-214-736-00	FILM 2K	1/4W
Q101	9-904-781-01	TRANSISTOR 2SC2061		R221	1-214-753-00	FILM 10K	1/4W
Q201	8-729-900-80	TRANSISTOR DTC114ES		R222	1-260-083-11	CARBON 47	1/2W
Q202	8-729-900-80	TRANSISTOR DTC114ES		R223	1-244-417-11	CARBON 1K	1/4W
Q203	8-729-900-80	TRANSISTOR DTC114ES		R224	1-249-419-11	CARBON 1.5K	1/4W
Q204	8-729-900-80	TRANSISTOR DTC114ES		R225	1-247-855-31	CARBON 10K	1/4W
Q205	8-729-900-80	TRANSISTOR DTC114ES		R226	(9-907-107-01)	METAL OXIDE 430	1/4W
		<RESISTOR>		R227	(9-907-094-01)	METAL OXIDE 1.2K	1/4W
R101	1-202-719-00	SOLID 1M	1/2W	R228	9-907-108-01	CARBON 0.22	1/4W
R102	9-904-783-01	THERMISTOR 5	25°C	R229	(9-907-109-01)	METAL OXIDE 1.3K	1/4W
R103	1-218-642-11	FILM 100K	1W	R230	(9-907-107-01)	METAL OXIDE 430	1/4W
R104	1-218-642-11	FILM 100K	1W	R231	1-249-416-11	CARBON 820	1/4W
R105	1-260-127-11	CARBON 220K	1/2W	R231	1-249-414-11	CARBON 560	1/4W
R106	1-260-127-11	CARBON 220K	1/2W			<RELAY>	
R107	1-215-925-11	FILM 22K	3W	RL201	9-907-115-01	RELAY	
R108	1-215-925-11	FILM 22K	3W			<TRANSFORMER>	
R109	1-215-882-00	FILM 22	2W	T101	9-907-100-01	SWITCHING	
R110	9-907-093-01	CEMENT 0.15	2W	T102	9-907-101-01	SWITCHING	

The components identified by shading and mark are critical for safety. Replace only with part number specified.

## SWITCHING REGULATOR

Ref.No	Part No.	Description	Remark
		<VARIABLE RESISTOR>	
VR201	9-907-110-01	RES, VER, CARBON 2K	
VR202	9-907-111-01	RES, VER, CARBON 500	
VR203	1-238-570-11	RES, VER, CARBON 2K	
VR204	1-238-570-11	RES, VER, CARBON 2K	
		<MISCELLANEOUS>	
TC101	9-907-092-01	THERMAL CUT OFF	
*****			
		MISCELLANEOUS	
		*****	
▲1-413-946-11		SWITCHING REGULATOR	
1-500-015-11		CORE	
1-500-114-11		HEAD, THERMAL	
1-507-195-21		SPECIAL REMOTE CONTROL JACK	
1-541-684-42		MOTOR, DC	
▲1-554-880-11		SWITCH, PUSH (AC POWER) (1 KEY)	
▲1-580-375-11		INLET 3P	
1-692-855-21		KEYBOARD, FFC WITH	
1-698-019-31		MOTOR, DC (FAN)	
1-751-235-11		CABLE, FLAT (FVM-2)	
1-751-238-11		CABLE, FLAT (FHH-1)	
1-751-239-11		CABLE, FLAT (FHH-2)	
1-765-051-11		WIRE (FLAT TYPE) (7 CORE)	
1-765-052-11		WIRE (FLAT TYPE) (16 CORE)	
▲1-952-970-11		HARNESS, SUB (HMSW42)	
▲1-952-971-11		HARNESS, SUB (HMDS)	
▲1-952-972-11		HARNESS, SUB (HMPW)	
▲1-952-973-11		HARNESS, SUB (SPW)	
▲1-952-974-11		HARNESS, SUB (DSSW39)	
▲1-952-975-12		HARNESS, SUB (HMSW41)	
▲1-952-976-11		HARNESS, SUB (DSSU10)	
▲1-952-977-11		HARNESS, SUB (REMOTE)	
▲1-952-978-11		HARNESS, SUB (KYPTC)	
1-952-981-11		HARNESS, SUB (AC(SW))	
▲1-952-982-11		HARNESS (VIF012)	
▲1-952-986-12		HARNESS (FMKY)	
1-953-202-12		HARNESS, SUB (AC(IN)E)	
▲1-953-203-11		HARNESS (DC(012))	
*****			
		ACCESSORY & PACKING MATERIALS	
		*****	
1-465-508-21		COMMANDER, REMOTE	
▲1-551-631-41		CORD, POWER	
1-557-637-11		CABLE, COMMANDER	
▲3-183-227-02		TRAY	
▲3-183-922-02		INDIVIDUAL CARTON	
▲3-183-929-01		CUSHION (TOP)	
▲3-183-930-01		CUSHION (BOTTOM)	
▲3-694-922-01		SHEET, PROTECTION	
3-758-132-11		MANUAL, INSTRUCTION	
3-758-769-11		CARD, QUICK REFERENCE	
*****			

Ref.No	Part No.	Description	Remark
		HARDWARE LIST	
		*****	
7-621-255-15		SCREW +P 2X3	
7-621-259-35		SCREW +P 2.6X5	
7-621-284-40		SCREW +P 2.6X10	
7-621-759-75		+PSW, 2.6X10	
7-624-102-04		STOP RING 1.5, TYPE -E	
7-682-166-01		SCREW +P 4X20	
7-682-645-01		SCREW +PS 3X4	
7-682-647-09		SCREW +PS 3X6	
7-685-103-19		SCREW +P 2X5 TYPE2 NON-SLIT	
7-685-104-19		SCREW +P 2X6 TYPE2 NON-SLIT	
7-685-134-19		SCREW +P 2.6X8 TYPE2 NON-SLIT	
7-685-534-19		SCREW +BTP 2.6X8 TYPE2 N-S	
7-685-645-79		SCREW +BVTP 3X6 TYPE2 IT-3	
7-685-646-79		SCREW +BVTP 3X8 TYPE2 IT-3	
7-685-852-01		SCREW +BVTT 2X5 (S)	
7-685-862-01		SCREW +BVTT 2.6X6 (S)	
*****			



## SECTION 7

### ELECTRICAL ADJUSTMENT

#### 7-1. PREPARATION BEFORE ADJUSTMENT

The measurement equipment below is used for adjustment.

##### 7-1-1. Equipment Required

- 1) Monitor television
- 2) Dual-trace oscilloscope with band of more than 30 MHz and delay mode  
(Use a 10:1 probe unless otherwise specified.)
- 3) Frequency counter
- 4) Signal generator video output terminals (TSG-131, TSG-131A, TSG-1411 or SG-408P)
- 5) Digital voltmeter
- 6) Video print paper
- 7) Video print cartridge

##### 7-1-2. Connection of the Equipment

As shown in Fig. 7-1, each measurement equipment is connected according to instructions from the input terminal (S video or video) to perform the adjustment. Each input terminal is specified in a signal column by parentheses. If not specified, either input terminal can be used.

**Note:** For the adjustment specified as an S video input terminal, the product specifications of this unit may not be satisfied when the adjustment is performed by a video input terminal. Be sure to perform the adjustment according to instructions.

When the adjustment is performed using the VTR with an S video output terminal as a signal source, the performance of this unit varies depending on the VTR. Use the pattern generator with a Y/C separation output terminal as far as possible.

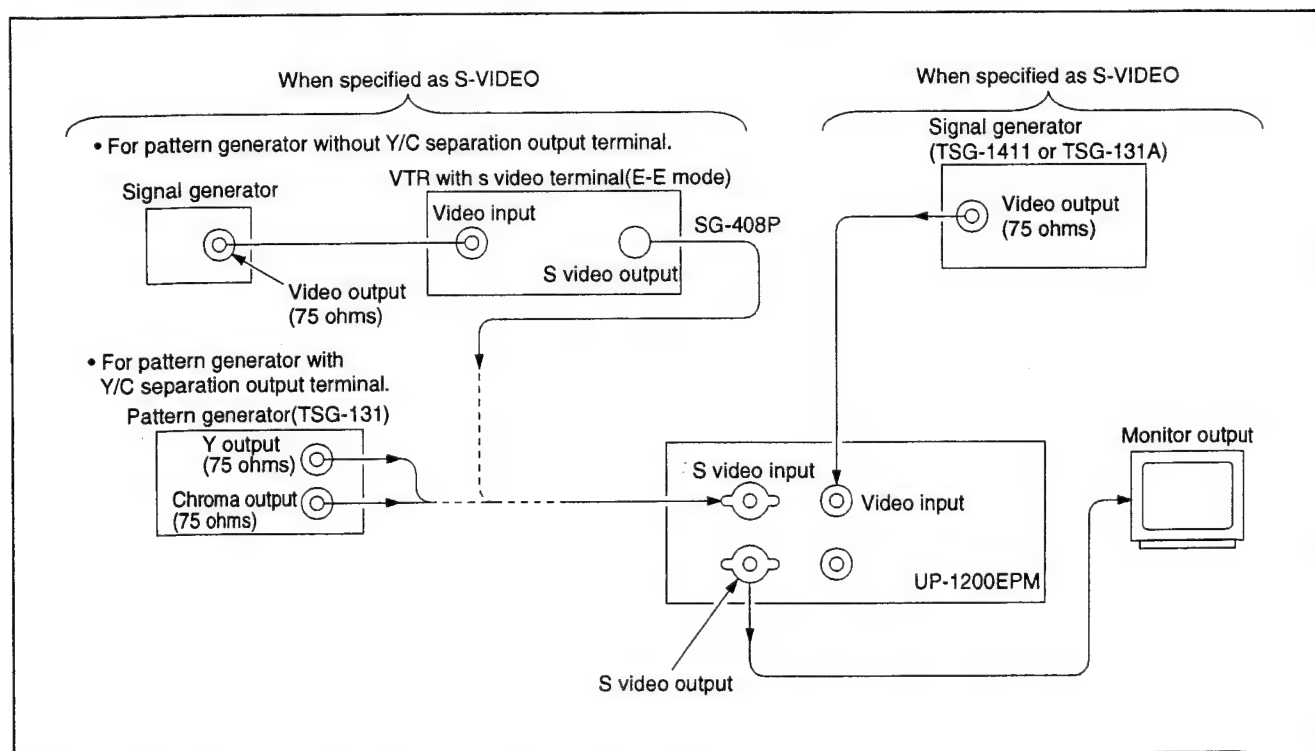


Fig. 7-1.

### 7-1-3. Confirmation of the Input Signal

The video signal generated from a pattern generator is used for video circuit adjustment as an adjustment signal. Therefore, it is necessary that this video output signal satisfies the required specification.

#### 1. During S video (S VIDEO) input

Connect an oscilloscope to the Y signal terminal of the S video input terminal, and confirm that the sync signal of a Y signal is 286 mV, the amplitude of the video portion is 714 mV, and the setup level is 0 mV. (When the VTR with an S video output terminal is used, confirm that no chroma signal and burst signal remain.) Moreover, connect an oscilloscope to the chroma signal terminal of the S video input terminal, and confirm that the burst signal amplitude of a chroma signal is flat (286 mV) and that the amplitude ratio of a burst signal to a chroma signal is 0.30 : 0.66. The Y signal and chroma signal used for the adjustment are shown in Fig. 7-2.

The setup level is the potential difference between the black and pedestal levels.

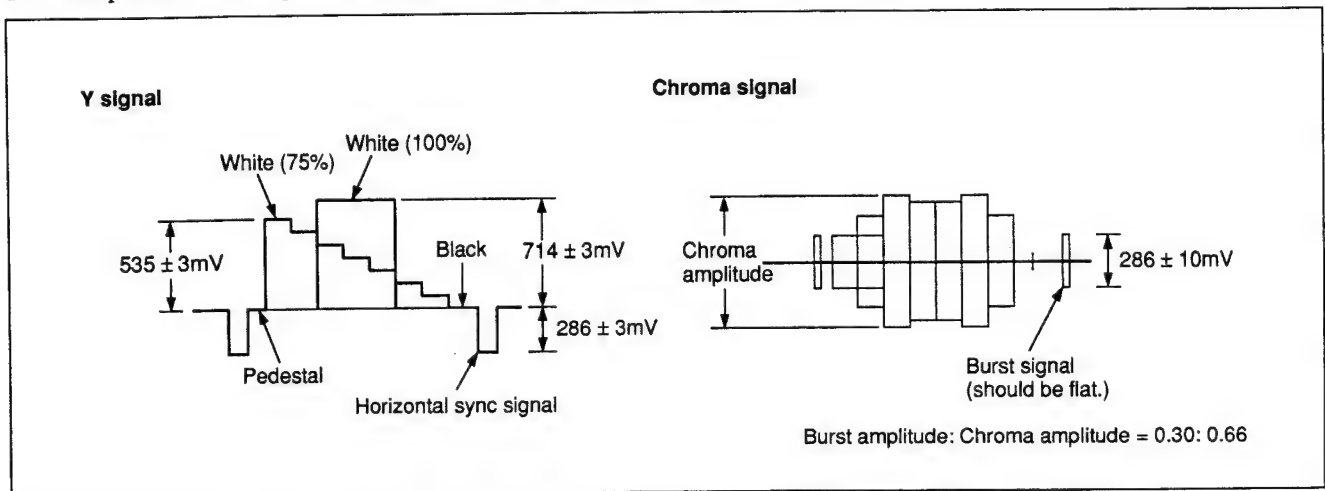


Fig. 7-2. Color-Bar Signal in Pattern Generator (during 75-ohm Termination)

#### 2. During video (VIDEO) input

Connect an oscilloscope to the video input terminal, and confirm that the sync signal amplitude of a video signal is 286 mV, the amplitude of the video portion is 714 mV, the setup level is 0 mV, the amplitude of a burst signal is flat (286 mV), and the level ratio of a burst signal to a "red" signal is 0.30 : 0.66.

The video signal (color-bar) used for the adjustment is shown in Fig. 7-3.

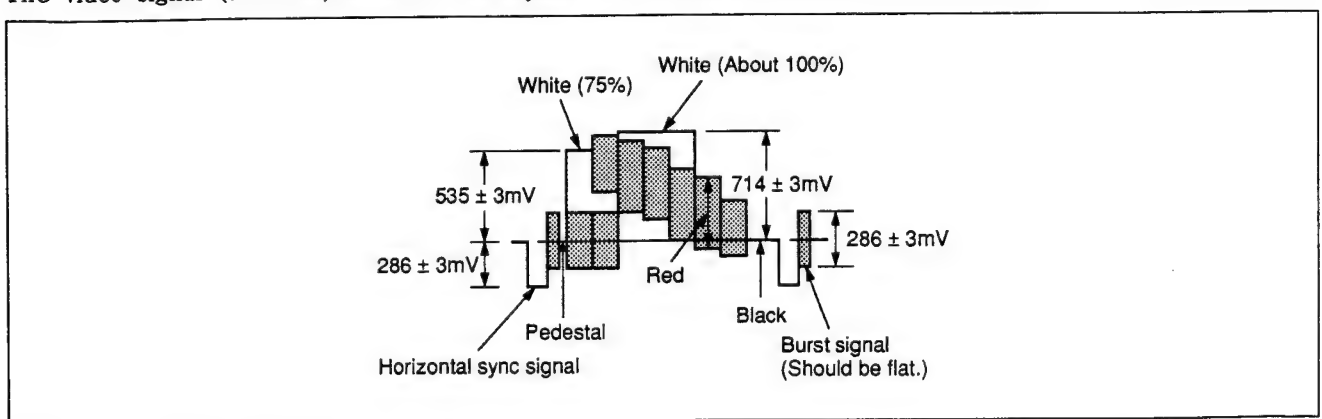


Fig. 7-3. Color-Bar Signal in Pattern Generator (during 75-ohm Termination)

#### 7-1-4. How to Operate Adjustment Remote Controller RM-95 (J-6082-053-A)

For the connection of adjustment remote controller RM-95, insert the RM-95 terminal into J101 LANC jack on the VA-76 board in the UP-1200 series.

Before performing each adjustment, reset the corresponding protector as shown in the table below.

Page	6	Data	80	Address	00
------	---	------	----	---------	----

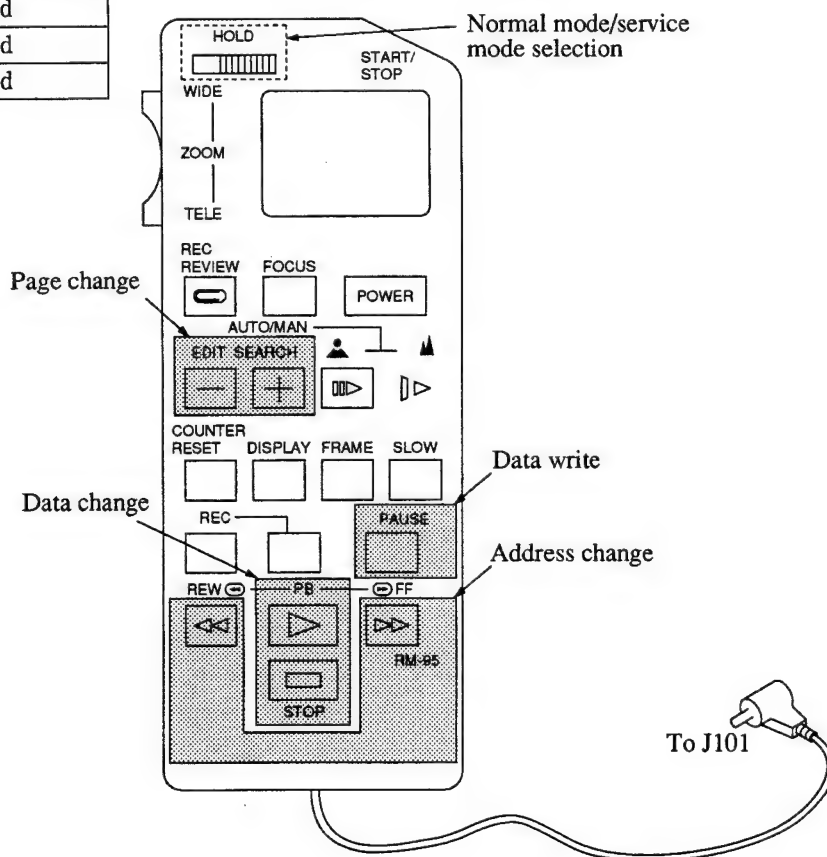
However, any reset is not required during continuous adjustment. Press the PAUSE button for every adjustment item and write each data.

##### 1. Menu setting

The menu is set in the initial state (refer to the table below).

Number of prints	1
Memo	No memo print
Memory setting	Standard
Print setting	Standard
Picture quality setting	Standard

Adjustment remote controller RM-95 (J-6082-053-A)



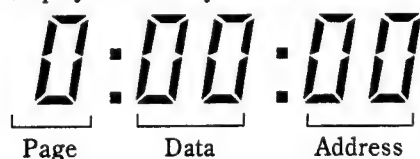
#### 7-1-5. Service Mode

##### 1. Setting the service mode

The service mode is classified into an adjustment mode that adjusts the EVR and a test mode that displays the state of the unit.

The test mode and adjustment mode are entered if the adjustment remote controller (with the HOLD switch set to HOLD) is connected.

LCD display of the adjustment remote controller



## 2. Video circuit adjustment

When F page data was erased during EE-PROM (IC309 on the VA-76 board) replacement, enter the initial value of the F page and adjust the video circuit.

For details of the initial value, refer to the "F Page Address Book" in "Service Man Mode".

## 3. Discrimination of the bit value

In subsequent items, it is necessary to discriminate the bit value by the display data of an adjustment remote controller. On whether the bit value is "1" or "0", discriminate according to the data shown in the table below.

Adjustment remote controller display



Address

Discriminates the values of bits 3 to 0.

Discriminates the values of bits 7 to 4.

Remote controller display	Bit value			
	Bit 3 or 7	Bit 2 or 6	Bit 1 or 5	Bit 0 or 4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
Ⓐ → 8	1	0	0	0
9	1	0	0	1
A(H)	1	0	1	0
B(b)	1	0	1	1
C(c)	1	1	0	0
D(d)	1	1	0	1
Ⓑ → E(E)	1	1	1	0
F(F)	1	1	1	1

(Example) When the display data of the remote controller is "8E", the values of bits 7 to 4 can be discriminated by column Ⓐ, and the values of bits 3 to can be discriminated by column Ⓑ.

Command name	Function	Command button
Page Up	Increments the page by one.	Edit Search
Page Down	Decrements the page by one.	Edit Search
Address Up	Increments the address by one.	Fast Forward
Address Down	Decrements the address by one.	Rewind
Data Up	Increments the data by one.	Play Back
Data Down	Decrements the data by one.	Stop
Store	Writes data in an EE-PROM RAM.	Pause

#### 4. Entering the test signal (Transmission to memory control)

LCD display of the adjustment remote controller

The LCD display shows the time 0:00:00. Below the digits, there are three brackets. The first bracket is under the first '0' and is labeled 'Page'. The second bracket is under the two '00' and is labeled 'Data'. The third bracket is under the last '00' and is labeled 'Address'.

- 1) Insert the RM-95 into the control terminal (J-1 on the VA-14 board).
  - 2) Set the HOLD switch of the RM-95 to the service mode. (Usually set to the service mode.)
  - 3) Turn on the power of the UP-1200EPM and set each signal as shown below.
- ※ The input signal is a non-signal.

[Color-bar signal]

Page	7	Data	2b	Address	20
------	---	------	----	---------	----

[Stairstep signal(H)]

Page	7	Data	27	Address	20
------	---	------	----	---------	----

[Stairstep signal(V)]

Page	7	Data	28	Address	20
------	---	------	----	---------	----

[Ramp signal(H)]

Page	7	Data	29	Address	20
Page	7	Data	2C	Address	20

[Ramp signal(V)]

Page	7	Data	2A	Address	20
------	---	------	----	---------	----

## 5. Infrared remote controller check

Page	7	Data		Address	07
------	---	------	--	---------	----

※ The reception-time state of an infrared remote controller can be confirmed by the number of display data items.

Data	Reception-time state	Data	Reception-time state
01	Power supply	42	MENU
10	SOURCE/MEMORY	43	EXEC
11	Memory IN	14	STOP
13	Print	1C	MEMORY PAGE
30	UP	5D	Print quantity +
31	DOWN	5E	Print quantity -
32	LEFT	3C	Color adjustment
33	RIGHT	4B	MULTI PICTURE

## 6. Key input check

Page	7	Data		Address	11
------	---	------	--	---------	----

Data	Key input	Data	Key input
09	SOURCE/MEMORY	14	RIGHT
0A	MEMORY IN	11	MENU
0B	PRINT	12	EXEC
15	UP	01	STOP
16	DOWN	0C	MEMORY/PAGE
13	LEFT		

※ The status of each key can be confirmed in real time.

## 7. Key input check (edge)

Page	7	Data		Address	12
------	---	------	--	---------	----

※ Write the data below and press the PAUSE button. The state obtained when the key was pressed is then entered.

Data	Key input	Data	Key input
10	SOURCE/MEMORY	33	RIGHT
11	MEMORY IN	42	MENU
13	PRINT	43	EXEC
30	UP	14	STOP
31	DOWN	1C	MEMORY/PAGE
32	LEFT		



## 8. LED control check

Page	7	Data		Address	14
------	---	------	--	---------	----

※ The LED is made turned on forcibly.

Data	Operation
00	Normal
01	Only the error LED ( ) lights.
02	Only the print LED ( ) lights.

## 9. Buzzer sound check

Page	7	Data		Address	16
------	---	------	--	---------	----

※ Write any data and press the PAUSE button. The "buzzer" then sounds.

## 10. Sharpness adjustment

Page	7	Data		Address	40
------	---	------	--	---------	----

Data	Level position
F9	MIN
00	CENTER
07	MAX

※ Write the above data and press the PAUSE button. The sharpness data is then changed.

## 11. Picture quality set check

Page	7	Data		Address	
------	---	------	--	---------	--

Address		
45	B	Offset level
46	G	
47	R	
48	B	GAIN
49	G	
4A	R	

Offset data	Level position	Gain data
08	MIN	3F
00	CENTER	80
38	MAX	E3

## 12. [Mode control: ROM Ver]

Page	7	Data		Address	01
------	---	------	--	---------	----

※ Indicates the ROM version during mode control.

### 13. THRU/EE check

Page	7	Data		Address	72
------	---	------	--	---------	----

Data	
01	EE
02	THRU

### 14. Test pattern memory write check

Page	7	Data		Address	20
------	---	------	--	---------	----

Data	Text pattern
27	Stairstep (H)
28	Stairstep (V)
29	Ramp (H)
2A	Ramp (V)
2B	Color-bar (false)

### 15. Input signal selection check

Page	7	Data		Address	71
------	---	------	--	---------	----

Data	Input signal
01	VIDEO
02	S VIDEO

### 16. Motor single-drive check

#### (1) Head motor

Page	8	Data		Address	1A
------	---	------	--	---------	----

Data	
00	Stop
01*1	Head position UP
02*2	Head position DOWN
08	Home position

※1 The head position changes by one step every time the PAUSE button of the RM-95 is pressed.

※2 Do not perform the DOWN operation in head position-1. This may destroy the unit. If so, turn off the AC power immediately.

#### (2) Ribbon motor (Roller motor)

Page	8	Data		Address	1A
------	---	------	--	---------	----

Data	
00	Stop
03*1	Roller position UP
04*2	Ribbon winding (continuous)

※1 The roller position changes by one step every time the PAUSE button of the RM-95 is pressed.

※2 Data 04 is continuously driven when the PAUSE button is pressed.

(3) Stepping motor, fan motor, delivery arm position

Page	8	Data		Address	1A
------	---	------	--	---------	----

Data	
00	Stop
05	Stepping motor rotation (continuous)
06	Stepping motor reverse-rotation (continuous)
09	Fan motor rotation
0B	Delivery arm position UP*

※ The delivery arm position changes by one step every time the PAUSE button is pressed.

17. Roller position data

Page	8	Data		Address	04
------	---	------	--	---------	----

Data	Position
E0	NULL
00	P0 position
02	P1 position
04	P2 position

18. Paper delivery arm position data

Page	8	Data		Address	05
------	---	------	--	---------	----

Data	Position
0E	NULL
00	Home position
01	Print position

19. Mechanical control ROM version check

Page	8	Data		Address	01
------	---	------	--	---------	----

※ Indicates the ROM version during mechanical control.

## 20. F page address book

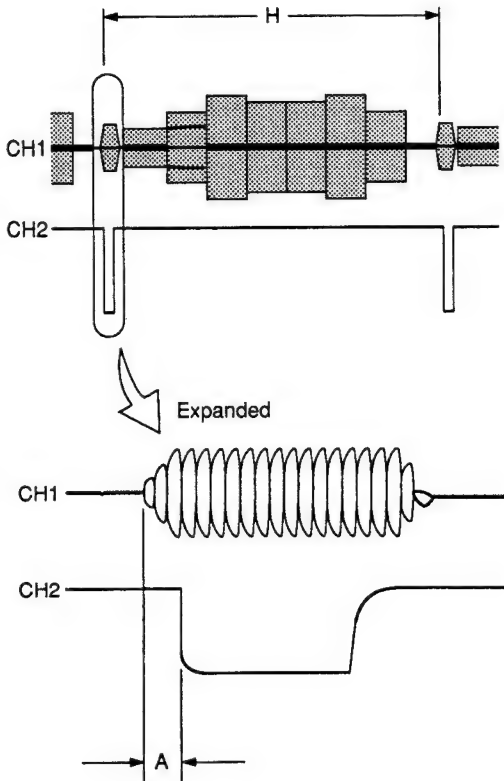
Adjustment address	Name	Function ( ) is the adjustment voltage output terminal.
00		
01		
02		
03		
04		
05		
06		
07		
08		
09		
0A		
0B		
0C		
0D		
0E		
0F		
10		
11	HUECONT	Decoder hue adjustment [CN502 ⑤]
12	CCONT	Decoder color adjustments [CN101 ②]
13	SHPCT	Decoder sharpness adjustment [IC301 ⑨, CN101 ②]
14	G-GAIN	Green gain adjustment
15	R-GAIN	Red gain adjustment
16	B-GAIN	Blue gain adjustment
17	WH-REF	AGC gain level adjustment [R340, 341]
18	BLACK-REF	Auto pedestal limiter adjustment [Q323-E]
19	AGCC-OST	Chroma Y AGC Offset
1A	D/A	D/A REF adjustment
1B	AGC OST	Y AGC level adjustment [CN103 ⑳]
1C		
1D		
1E		
1F		
20	ERG	Encoder white balance adjustment
21	DM-LEV	
22	COLOR	INT/EXT detection level adjustment [IC106 ⑦]
23	CHROMA LEV	Encoder chroma level adjustment
24	BURST LEV	Encoder burst level adjustment
25	W-POSIT	AFC phase adjustment
26		
27		
28	ABL OST	ABL offset adjustment 1 [Q302-E]
29	TPADJ	Timing pulse adjustment
2A	EBG	Encoder white balance adjustment
2B	HUE	Encoder hue adjustment
2C		
2D		
2E		
2F		

## 7-2. VIDEO CIRCUIT ADJUSTMENT (VA-76 BOARD)

### 7-2-1. INT/EXT Detection Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Input signal: Color-bar (VIDEO)</li> <li>Measurement equipment: Digital voltmeter</li> </ul>	Measurement point: Pin ⑦ of IC106 or positive ("+") side of C103  $2.0 \pm 0.05 \text{ V DC}$	Adjustment page	F
		Adjustment address	22

### 7-2-2. BGP Phase Adjustment

Conditions for adjustment	Spec.	Adjustment
<ul style="list-style-type: none"> <li>Input signal: Color-bar (S VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> </ul>	Measurement point: Pin ③① of C376 or IC311 (CH1) Pin ①⑥ of IC311 (CH2)   $A = 0.77 \pm 0.07 \mu \text{ sec}$	● RV304

### 7-2-3. APC Free-Running Frequency Adjustment

Conditions for adjustment	Spec.	Adjustment
<ul style="list-style-type: none"> <li>Input signal: Non-signal (with the input cable removed)</li> <li>Measurement equipment: Frequency counter</li> </ul>	Measurement point: Emitter of Q334 or Q328 Shortcircuit IC311 ②③ pin to ground and IC311 ③① pin to ground.  $f = 4.433619 \text{ MHz} \pm 20\text{Hz}$	RV301

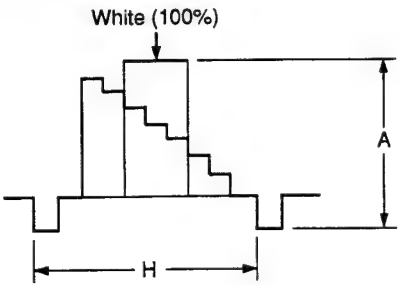
### 7-2-4. INT Sync Generator Frequency Adjustment

Conditions for adjustment	Spec.	Adjustment
<ul style="list-style-type: none"> <li>Input signal: Non-signal (with all the input cables removed)</li> <li>Measurement equipment: Frequency counter</li> </ul>	Measurement point: Pin ②④ of IC130 or pin ① of IC128  $f = 4.433619 \text{ MHz} \pm 20 \text{ Hz}$	CT102

### 7-2-5. AFC Error Voltage Adjustment

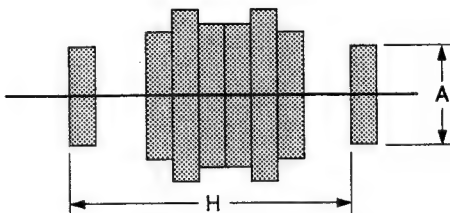
Conditions for adjustment	Spec.	Adjustment
<ul style="list-style-type: none"> <li>Input signal: Non-signal (with all the input cables removed)</li> <li>Measurement equipment: Digital voltmeter</li> </ul>	Measurement point: CC101  $-0.5 \pm 0.2 \text{ V DC}$	CT101

### 7-2-6. Y/C Separation Y-Level Adjustment

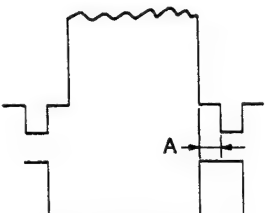
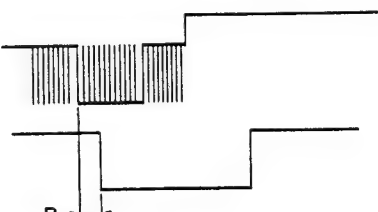
Conditions for adjustment	Spec.	Adjustment
<ul style="list-style-type: none"> <li>Input signal: Color-bar (VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> </ul>	Measurement point: Emitter of Q116 or Q218   $A = 1.00 \pm 0.03 \text{ V p-p}$	RV302



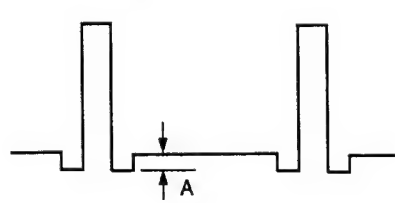
### 7-2-7. Y/C Separation Chroma-Level Adjustment

Conditions for adjustment	Spec.	Adjustment
<ul style="list-style-type: none"> <li>Input signal: Color-bar (VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> </ul>	<p>Measurement point: Emitter of Q121</p>  <p><math>A = 300 \pm 30 \text{ mV p-p}</math></p>	<p>RV303</p>

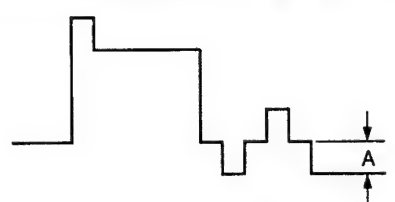
### 7-2-8. SYNC SEPA Phase Check

Conditions for adjustment	Spec.	Adjustment
<ul style="list-style-type: none"> <li>Input signal: Color-bar (S VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> </ul>	<p>Measurement point: IC110 ⑨ pin (Phase check of H SYNC and HD PULSE)</p>  <p><math>A = 11.5 \pm 1.00 \mu \text{ sec}</math></p> <p>Measurement point: CN102 ⑧ pin (Phase check of V SYNC and VD PULSE)</p>  <p><math>B = 49.0 \pm 3.0 \mu \text{ sec}</math></p>	

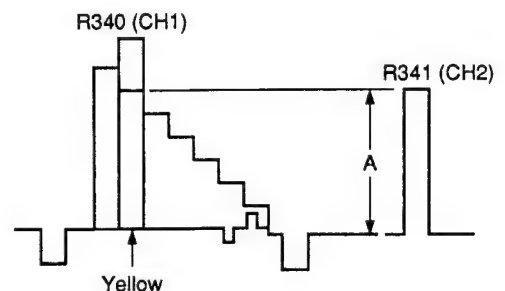
### 7-2-9. ABL Adjustment (1)

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Input signal: Black burst (S VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> </ul>	Measurement point: Emitter of Q302   $A = 0 \pm 20 \text{ mV}$	Adjustment page	F
		Adjustment address	28

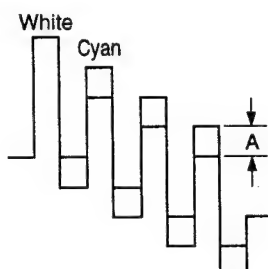
### 7-2-10. ABL Adjustment (2)

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Input signal: Color-bar (S VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> </ul>	Measurement point: CN101 ② pin or C348   $A = 0 \pm 20 \text{ mV}$	Adjustment page	F
		Adjustment address	18

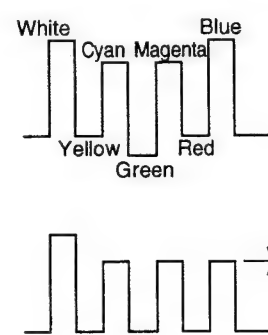
### 7-2-11. White REF Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Input signal: Color-bar (only Y)(S VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> </ul>	Measurement point: R340 (yellow) (CH1) R341 (white) (CH2)    Adjust so that the yellow (R340) of a Y signal component coincides with the peak level of a white REF pulse (R341). $A = \text{Within } 20 \text{ mV}$	Adjustment page	F
		Adjustment address	17

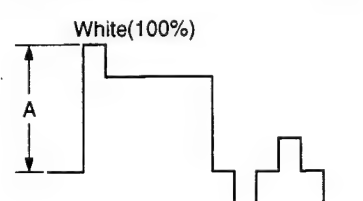
### 7-2-12. Decoder DL AMP DAT Adjustment

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Input signal: Color-bar (S VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> </ul>	<p>Measurement point: CN101 ② pin</p>  <p><math>A = 0 \pm 100 \text{ mV}</math></p> <p>Adjust address 2B and DL303 alternatly.</p>	Adjustment page	F
		Adjustment address	2B
		DL303	

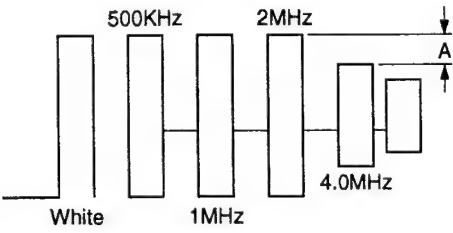
### 7-2-13. Decoder Color Adjustment

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Input signal: Color-bar 75% (S VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> </ul>	<p>Measurement point: CN101 ② pin</p>  <p><math>A = 0 \pm 50 \text{ mV}</math></p> <p>(Adjust so that the difference in level of each color is zero ("0").)</p> <p>If the difference in level exists in each color, readjust the hue.</p>	Adjustment page	F
		Adjustment address	12

### 7-2-14. AGC Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Input signal: Color-bar (S VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> </ul>	<p>Measurement point: CN103 ② pin (G OUT)</p>  <p><math>A = 1.95 \pm 0.05 \text{ V p-p}</math></p>	Adjustment page	F
		Adjustment address	1B

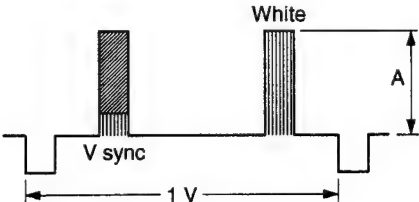
### 7-2-15. Decoder Sharpness Adjustment

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Input signal: Multi-burst (S VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> </ul>	<p>Measurement point: IC301 ⑨ pin (The levels of 1 MHz and 4 MHz should be the same.)</p>  <p>A = Within 0.1 V</p>	Adjustment page	F
		Adjustment address	13

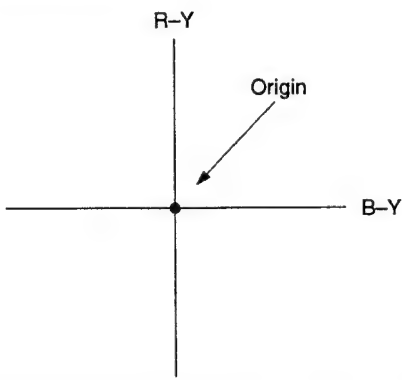
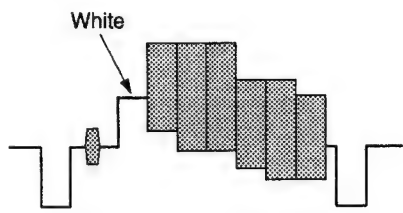
### 7-2-16. VRB CLP Reference Check

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Input signal: No signal input</li> <li>Measurement equipment: Digital multimeter</li> </ul>	Measurement point: CN101 ②⑥ pin (CLP REF) : $0.5 \pm 0.1$ V		
	Measurement point: CN101 ①⑥ pin (V RB) : $0.5 \pm 0.1$ V		

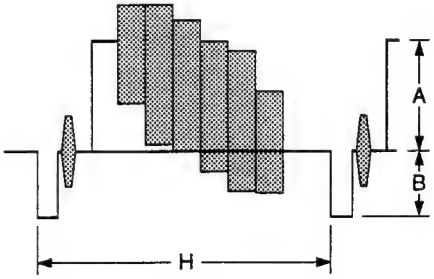
### 7-2-17. OSD Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Input signal: No signal input</li> <li>Measurement equipment: Oscilloscope</li> </ul>	<p>Measurement point: VIDEO OUT (75-ohm termination)</p>  <p>A = <math>500 \pm 30</math> mV (Y component of white character.)</p>	Adjustment page	F
		Adjustment address	27

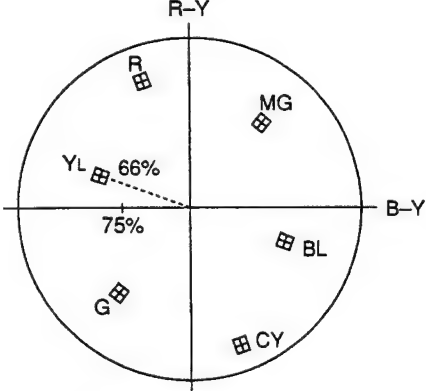

## 7-2-18. Encoder White Balance Adjustment

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Mode: Input picture</li> <li>Input signal: Multi-burst (S VIDEO)</li> <li>Measurement equipment: Oscilloscope, Vectorscope, 75-ohm termination</li> </ul>	<p>Measurement point: Video output terminal</p> <ul style="list-style-type: none"> <li>For vectorscope</li> </ul>  <p>The white luminescent spot should coincide with the origin.</p> <ul style="list-style-type: none"> <li>For oscilloscope</li> </ul>  <p>Adjust so that the chroma signal component (3.58 MHz) that leaks to the white portion of an output waveform is minimum.</p>	Adjustment page	F
		Adjustment address	20(ERG) 2A(EBG)
		<p>※Perform address 20 and 2A alternately.</p>	

## 7-2-19. D/A REF Adjustment

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Mode: Input picture</li> <li>Input signal: Color-bar (VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> </ul>	<p>Measurement point: Video output terminal (75-ohm termination)</p>  <p> <math>A = 485 \pm 20 \text{ mV}</math>  <math>B = 300 \pm 30 \text{ mV}</math> </p>	Adjustment page	F
		Adjustment address	1A

7-2-20. Encoder Chroma Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
		Adjustment page	F
<ul style="list-style-type: none"><li>· Mode: Input picture</li><li>· Input signal: Color-bar (VIDEO)</li><li>· Measurement equipment: Vectorscope</li><li>· Video output terminal in 75-ohm termination</li></ul>	<p>Measurement point: Video output terminal (Adjust the saturation level of yellow to 66%)</p> <ul style="list-style-type: none"><li>· For Vectorscope</li></ul>  <ul style="list-style-type: none"><li>· 87% of length between center of yellow "  " and cross point of R-Y and B-Y axes.</li></ul> <ul style="list-style-type: none"><li>· For Oscilloscope<ul style="list-style-type: none"><li>Yellow, Blue: <math>430 \pm 20</math> mV p-p</li><li>Cyan, Red: <math>610 \pm 20</math> mV p-p</li><li>Magenta, Green: <math>566 \pm 20</math> mV p-p</li></ul></li></ul>	Adjustment address	23



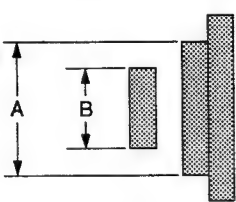
### 7-2-21. Encoder Color Burst Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Mode: Input picture</li> <li>Input signal: Non-signal</li> <li>Measurement equipment: Vectorscope</li> </ul>	Measurement point: Video output (in 75-ohm termination)	Adjustment page	F
		Adjustment address	24
	<ul style="list-style-type: none"> <li>For Vectorscope               <div data-bbox="649 568 1072 972" data-label="Figure"> </div> <p>A: Saturation point one piece</p> </li> <li>For Oscilloscope               <div data-bbox="627 1106 1072 1285" data-label="Figure"> </div> <p><math>B = 300 \pm 10 \text{ mV p-p}</math></p> </li> </ul>		

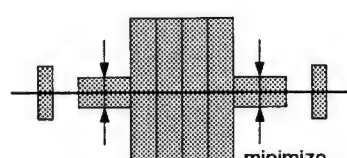
### 7-2-22. S Video Output Y Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"> <li>Mode: Input picture</li> <li>Input signal: Color-bar (VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> <li>S video output Y terminal in 75-ohm termination</li> </ul>	Measurement point: S VIDEO OUT. CN502 ③ pin(Y) <div data-bbox="649 1644 1056 1868" data-label="Figure"> </div> <p> <math>A = 485 \pm 20 \text{ mV}</math>  <math>B = 300 \pm 30 \text{ mV}</math> </p>		


### 7-2-23. S Video Output Chroma Level Adjustment

Conditions for adjustment	Spec.	Adjustment
<ul style="list-style-type: none"> <li>Mode: Input picture</li> <li>Input signal: Color-bar (VIDEO)</li> <li>Measurement equipment: Oscilloscope</li> <li>S video output C terminal in 75-ohm termination</li> </ul>	<p>Measurement point: S VIDEO OUT. CN502 ⑤ pin(C)</p>  <p> <math>A = 430 \pm 30 \text{ mV}</math>  <math>B = 300 \pm 30 \text{ mV}</math> </p>	

### 7-2-24. Decoder Hue Adjustment

Conditions for adjustment	Spec.	Adjustment	
<ul style="list-style-type: none"><li>Input signal: Unti PAL signal (SG-408P) (S VIDEO)</li><li>Measurement equipment: Oscilloscope</li></ul>	<p>Measurement point: CN502 ⑤ pin (S VIDEO OUT)</p> 	Adjustment page	F
		Adjustment address	11

### 7-2-25. Decoder DL AMP DAT Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar (S VIDEO)  · Measurement equipment: Oscilloscope	Measurement point: CN101 ② pin(B OUT)    A = Within ± 20 mV	Adjustment page	F
		Adjustment address	28
		DL303 ※ DL303 and address should be adjusted alternately.	

## 7-3. HEAD REPLACEMENT

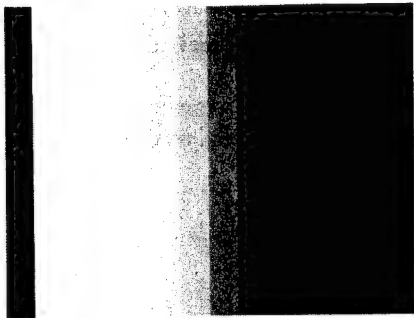
### 7-3-1. Adjustment

#### 1) Mechanical block

Thermal head replacement (Refer to "Printing the Test Signal by RM-95\*")

- (1) Print two sheets of paper via the defective head using a stairstep signal (H) before replacing the thermal head. Use the second sheet of paper for comparison of uneven image density.

After the thermal head was replaced, print two sheets of paper using a stairstep signal(H). Adjust so that the second sheet of printed paper is equal in density to the second sheet of paper printed before replacement.

Conditions for adjustment	Spec.	Adjustment
<ul style="list-style-type: none"> <li>Mode: Memory picture*<sup>1</sup></li> <li>Input signal: Stairstep signal (H)*<sup>2</sup></li> </ul>	<p>Should be equal to the sample image.</p> 	<p>⊖ VR201*<sup>3</sup></p>


※<sup>1</sup> Press the MEMORY IN or SOURCE/MEMORY button of the unit.

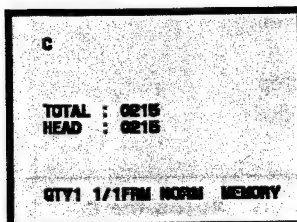
※<sup>2</sup> Refer to the stairstep signal (H) in "Entering the Test Signal".

※<sup>3</sup> Adjust using VR201 on the power board while pressing switch S705 on the HM board.  
[Voltage ⊕(thick); voltage ⊖(thin)]

## SECTION 8 SERVICE MODE

### 8-1. ENTERING THE SERVICE MODE

- 1) Turn on the power  while pressing the **STOP** and **MEMORY IN** keys simultaneously.  
 ※ Press the **STOP** and **MEMORY IN** keys until the "COLOR VIDEO PRINTER" display blinks on the monitor and until the loading motor stops.  
 (The standard screen below is displayed. The unit then enters the service mode.)






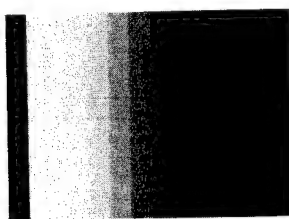
### 8-2. PRINTING THE TEST PATTERN

※ Perform the procedure below with the standard screen displayed on the monitor.

- 1) Press the **SOURCE/MEMORY** key to display the memory screen and press the **EXEC** key. The service mode standard screen is then displayed.



- 2) Move the cursor to **▷ PATTERN** using  and  keys and select one of the eight pattern signals below using  and  keys.



STAIRSTEP H



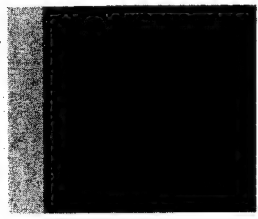
STAIRSTEP V



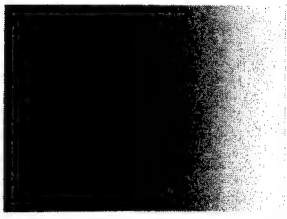
RAMP H



RAMP V



COLOR BAR H



ADJUST RAMP



ADJUST 8081



ADJUST AA55

- 3) Press the **EXEC** key. The screen then becomes black and the "PLEASE WAIT" display blinks. Pattern signals are displayed on the screen after a few seconds. Press the **PRINT** key to output a print.  
 ※ To change the pattern signal, repeat step 2) above. Next, press the **EXEC** key, then the **PRINT** key for a print output.

### 8-3. RESETTING THE PRINT COUNT DISPLAY DURING HEAD REPLACEMENT

Set F page addresses EEH and EFH to "00H" by RM-95 (remodeled kit for adjustment).

**SONY®**

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COLOR VIDEO PRINTER

# **UP-1200EPM**

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## **SERVICE MANUAL**

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### **SUPPLEMENT-1**

Please add and replace your manual with this SUPPLEMENT-1.


#### **SUBJECT**

- FMY-13P board change (Suffix -11 → -21)
  - Service mode
  - Correction
-

**WARNING !!**

**AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.**

**SAFETY-RELATED COMPONENT WARNING !!**

**COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**



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




## 1. FMY-13P BOARD CHANGE


### 1-1. ADDED PARTS OF FMY-13P BOARD (SUFFIX -21)

<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>			
<CAPACITOR>						
C440	1-163-275-11	CERAMIC	0.001uF	5%	50V	
C441	1-163-275-11	CERAMIC	0.001uF	5%	50V	
C442	1-163-231-11	CERAMIC	15PF	5%	50V	
C443	1-163-275-11	CERAMIC	0.001uF	5%	50V	
C444	1-163-243-11	CERAMIC	47PF	5%	50V	
C445	1-163-275-11	CERAMIC	0.001uF	5%	50V	
C446	1-163-275-11	CERAMIC	0.001uF	5%	50V	
C447	1-163-275-11	CERAMIC	0.001uF	5%	50V	
C706	1-163-038-00	CERAMIC	0.1uF		25V	
<IC>						
IC410	8-759-927-29	IC SN74HCU04ANS				
IC411	8-759-033-16	IC MC74F74M				
<TRANSISTOR>						
Q440	8-729-010-75	TRANSISTOR MSC4116-B/C				
Q441	8-729-010-75	TRANSISTOR MSC4116-B/C				
Q442	8-729-010-75	TRANSISTOR MSC4116-B/C				
<RESISTOR>						
R440	1-216-295-00	METAL	0	5%	1/10W	
R441	1-216-295-00	METAL	0	5%	1/10W	
R442	1-216-073-00	METAL	10K	5%	1/10W	
R443	1-216-063-00	METAL	3.9K	5%	1/10W	
R444	1-216-037-00	METAL	330	5%	1/10W	
R445	1-216-025-00	METAL	100	5%	1/10W	
R446	1-216-077-00	METAL	15K	5%	1/10W	
R447	1-216-073-00	METAL	10K	5%	1/10W	
R448	1-216-033-00	METAL	220	5%	1/10W	
R449	1-216-037-00	METAL	330	5%	1/10W	
R450	1-216-033-00	METAL	220	5%	1/10W	
R451	1-216-077-00	METAL	15K	5%	1/10W	
R452	1-216-073-00	METAL	10K	5%	1/10W	
R453	1-216-033-00	METAL	220	5%	1/10W	
R454	1-216-037-00	METAL	330	5%	1/10W	
R455	1-216-033-00	METAL	220	5%	1/10W	
R456	1-216-121-00	METAL	1M	5%	1/10W	
R457	1-216-121-00	METAL	1M	5%	1/10W	
R458	1-216-121-00	METAL	1M	5%	1/10W	
R459	1-216-295-00	METAL	0	5%	1/10W	

# 1-2. PRINTED WIRING BOARDS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.  
(In addition to this, the necessary note is printed in each block.)

- **For Printed Wiring Boards.**
  -  : Soldering Side.
  -  : Component Side.
- **For Schematic Diagrams.**
  - Caution when replacing chip parts.  
New parts must be attached after removal of chip.  
Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
  - All resistors are in ohms, 1/10W unless otherwise noted.  
kΩ: 1000Ω, MΩ: 1000kΩ.
  - All capacitors are in μF unless otherwise noted.  
pF: μμF.  
50V or less are not indicated except for electrolytics and tantalums.
  - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
  -  : nonflammable resistor.
  -  : fusible resistor.
  -  : panel designation.
  -  : adjustment for repair.
  -  : B+ Line.
  -  : B- Line.
  - Voltages are dc between ground and measurement points.
  - Readings are taken with a color-bar signal input.
  - Readings are taken with a digital multimeter (DC10MΩ).
  - Voltage variations may be noted due to normal production tolerances.

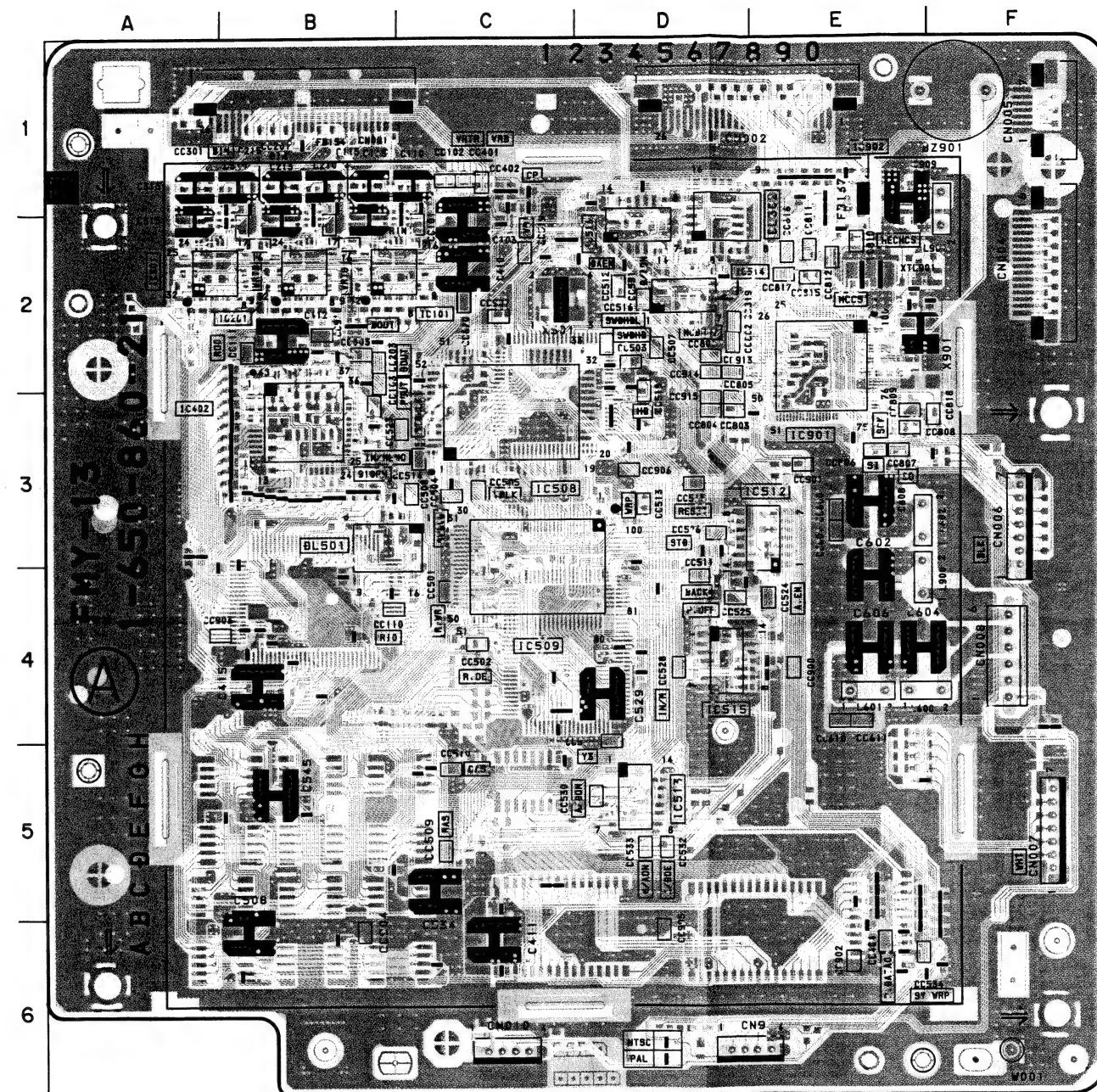
**Note:** The components identified by shading and mark  are critical for safety. Replace only with part number specified.

## FMY-13P (FRAME MEMORY)

### FMY-13P BOARD

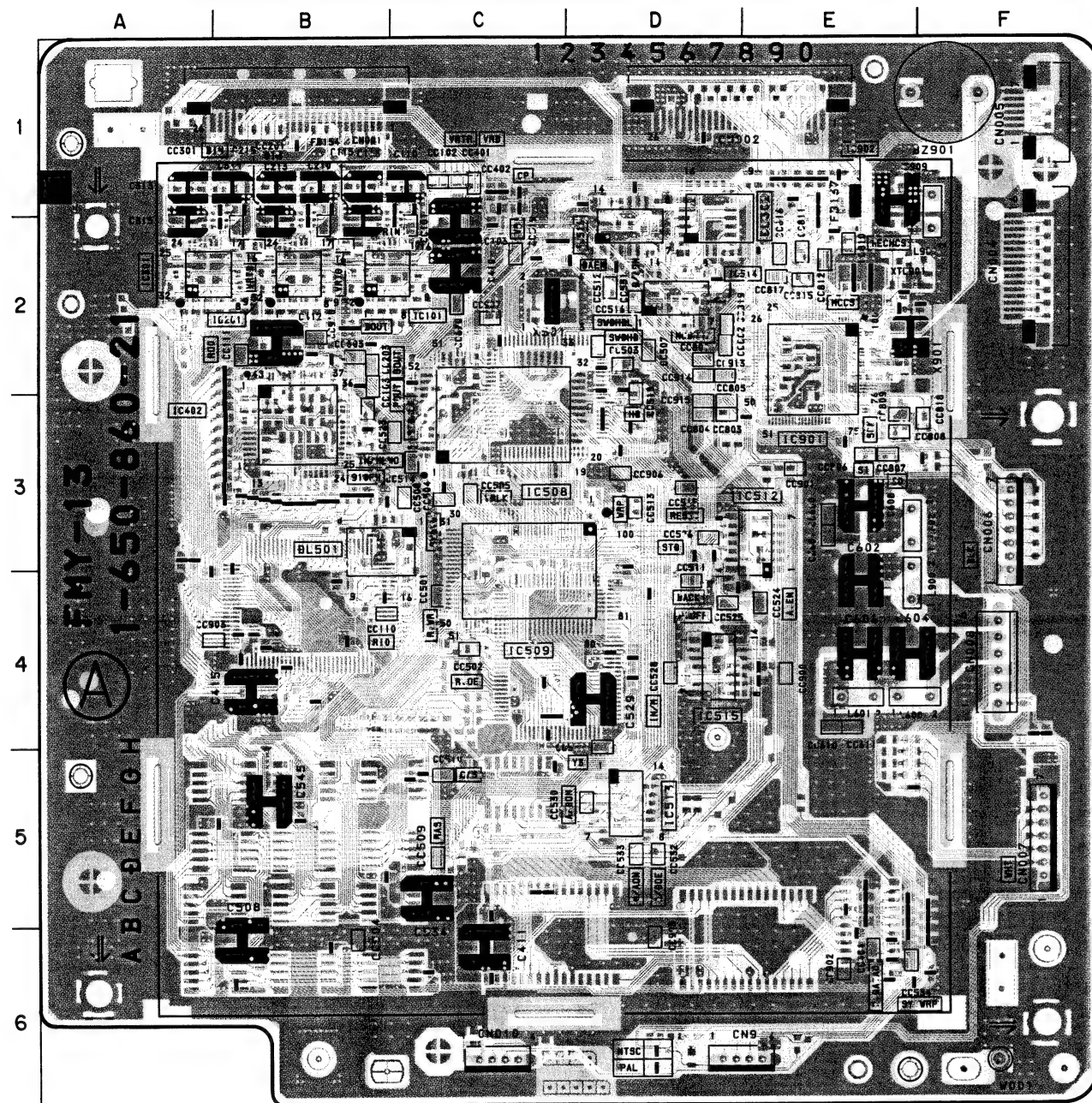
BZ901	F-1	IC503	B-5	S
		IC504	B-6	S
CN001	B-1	IC505	B-5	S
CN002	E-1	IC506	A-6	S
CN004	F-2	IC507	D-4	S
CN005	F-1	IC508	C-3	
CN006	F-3	IC509	C-4	
CN007	F-5	IC510	D-3	S
CN008	F-4	IC511	D-5	S
CN009	E-6	IC512	E-3	
CN010	C-6	IC513	D-5	
		IC514	E-2	
D101	C-2	S	IC515	E-4
D201	B-2	S	IC516	D-1
D301	B-2	S	IC901	E-3
D901	E-1	S	IC902	E-1
D903	F-2	S		
		L600	F-5	
DL501	B-4	L601	E-5	
DL502	E-2	L602	F-3	
		L900	F-4	
		L901	F-2	
FB137	E-2			
FB138	F-3			
FB139	F-3	S	Q101	C-1
FB140	E-3	S	Q102	C-2
FB141	E-3	S	Q201	B-1
FB142	F-3	S	Q202	B-2
FB143	E-5	S	Q301	B-1
FB144	E-5	S	Q302	B-2
FB145	E-5	S	Q401	C-3
FB146	E-5	S	Q440	B-2
FB147	E-5	S	Q441	B-2
FB149	B-1	S	Q442	B-2
FB150	C-1	S	Q902	F-2
FB151	B-1	S	Q903	E-2
FB152	B-2	S		
FB153	A-1	S	X501	D-2
FB154	B-2		X901	F-2
FL001	D-1	XTL901	F-2	
FL002	D-1			
FL003	D-1			
IC101	C-2			
IC201	B-2			
IC301	A-2			
IC401	B-4	S		
IC402	A-3			
IC403	D-6	S		
IC404	C-6	S		
IC405	E-6	S		
IC410	B-3	S		
IC411	D-1			
IC501	C-5	S		
IC502	C-6	S		

S:SOLDERING SIDE

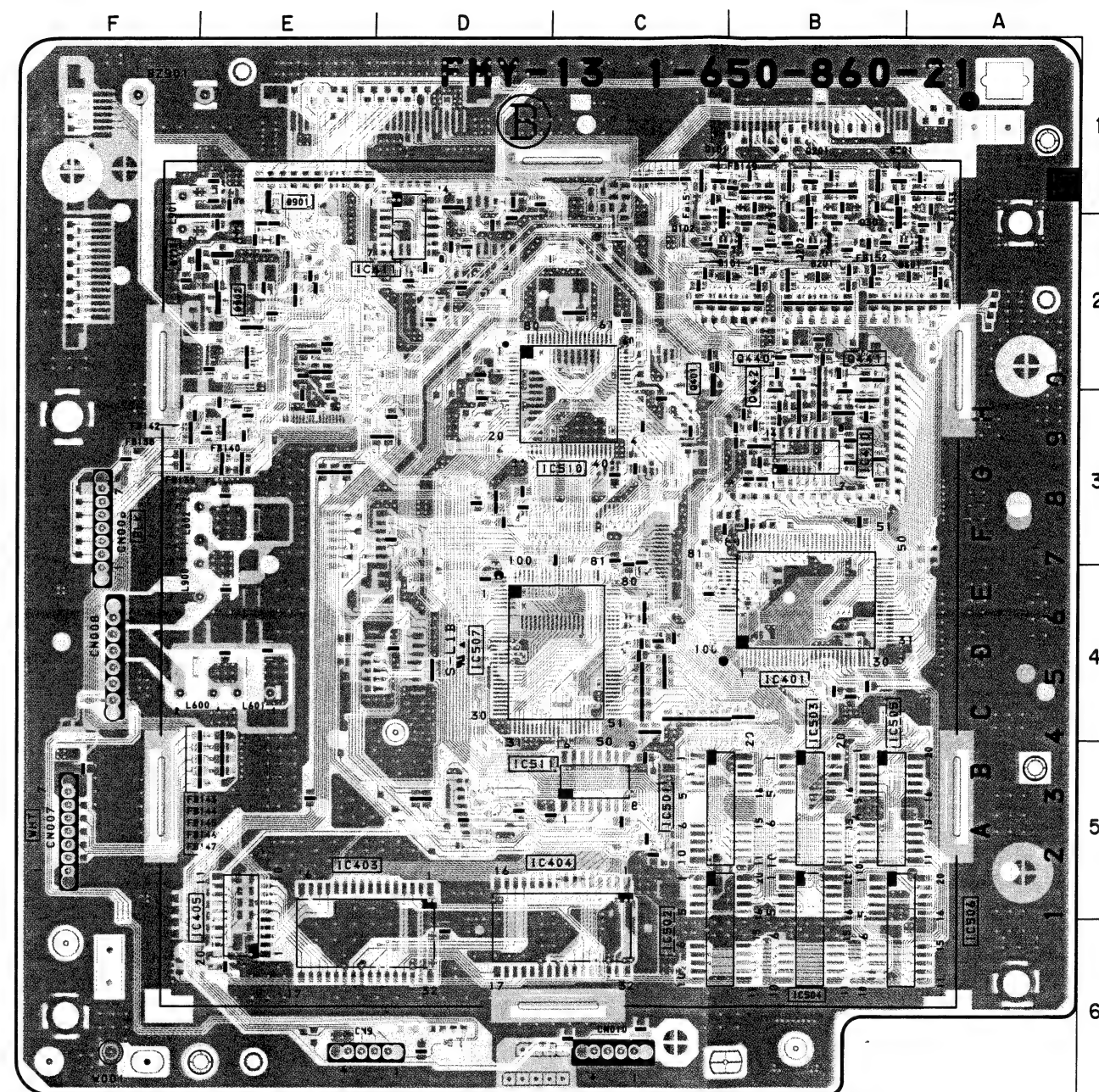


FMY-13 -COMPONENT SIDE-  
1-650-860-21

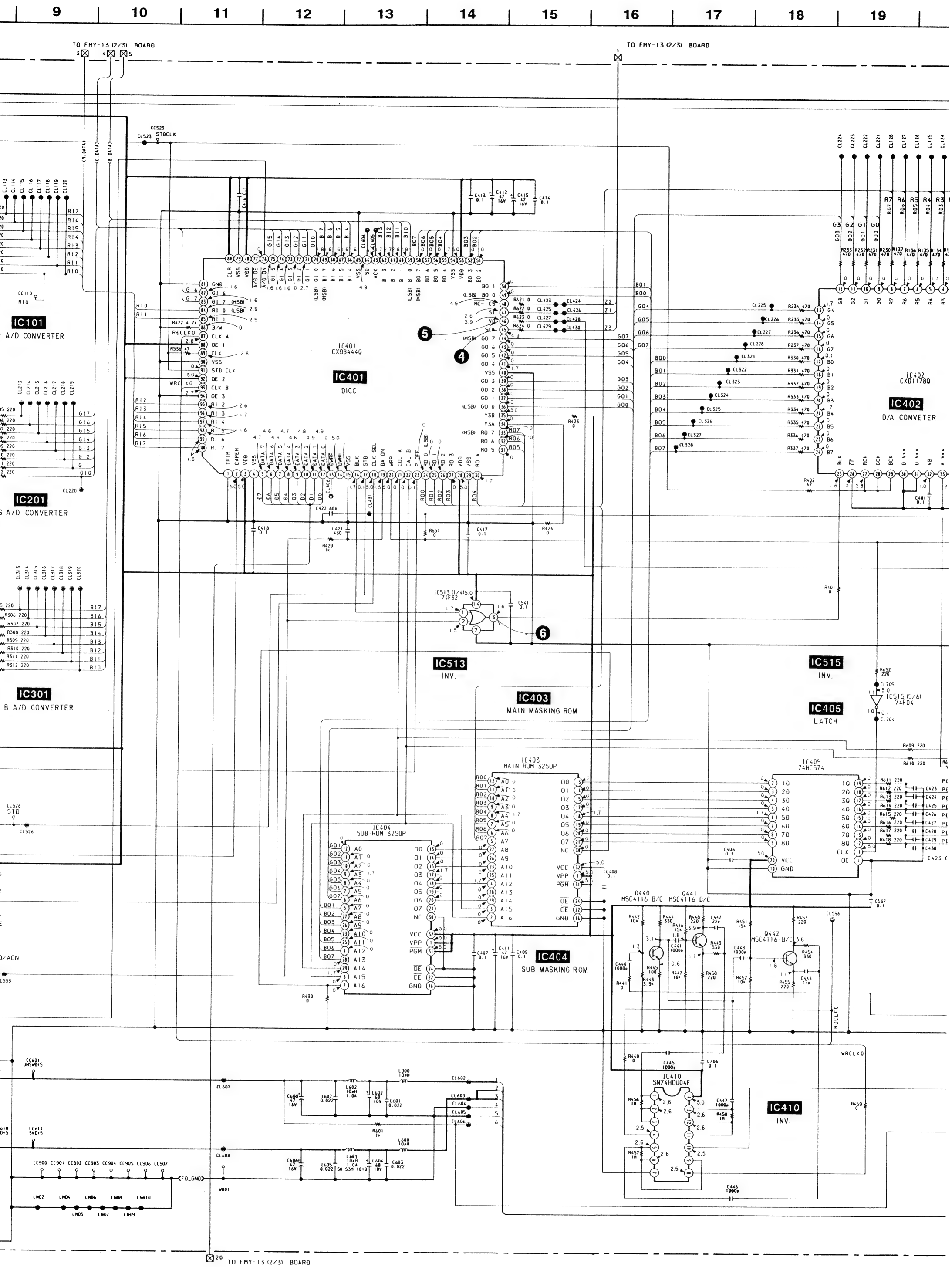




FMY-13 -COMPONENT SIDE-  
1-650-860-21

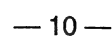


FMY-13 -SOLDERING SIDE-  
1-650-860-21





Y-13P — 1/3 — (FRAME MEMORY)

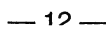


1	2	3	4	5	6	7	8
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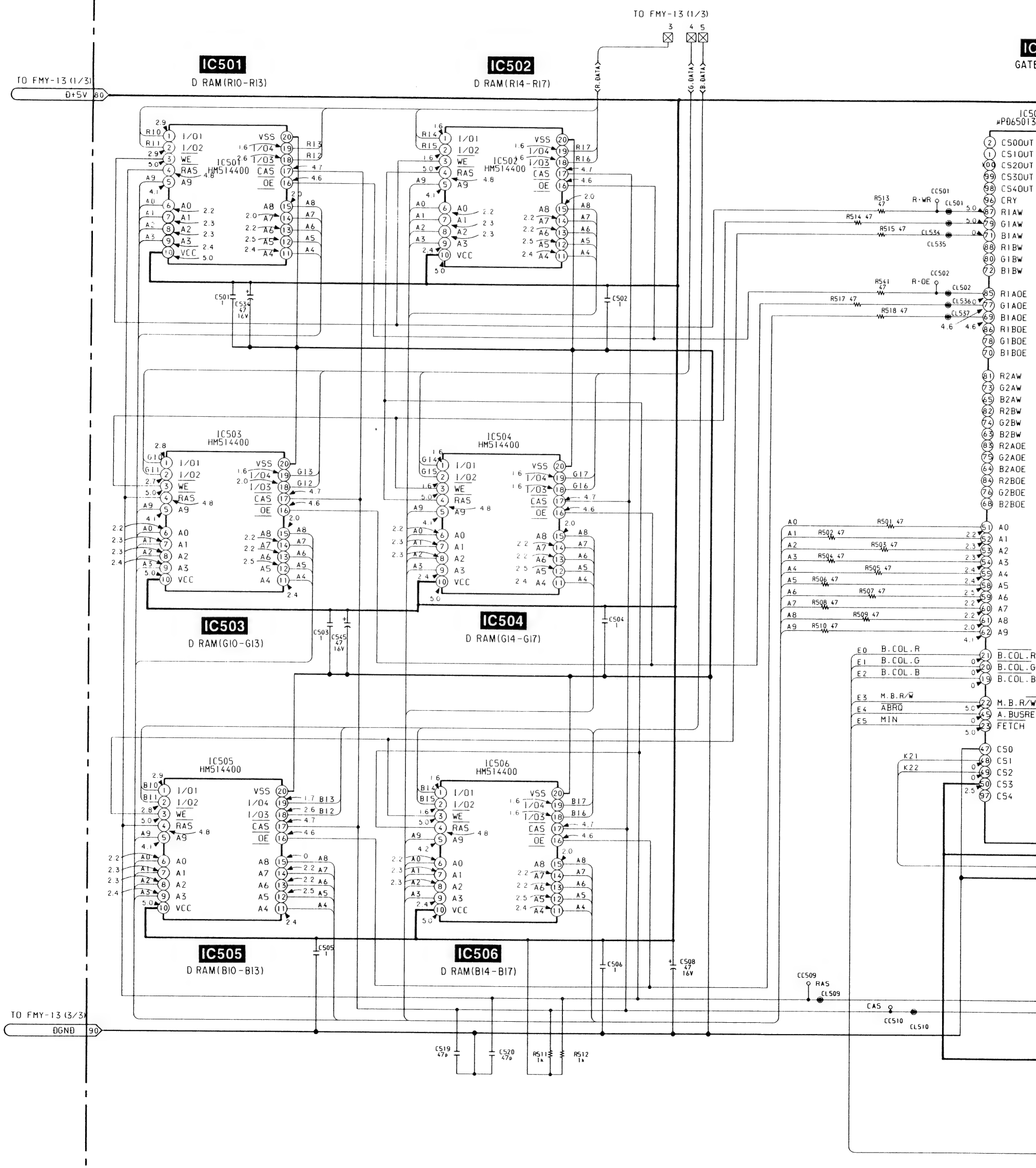






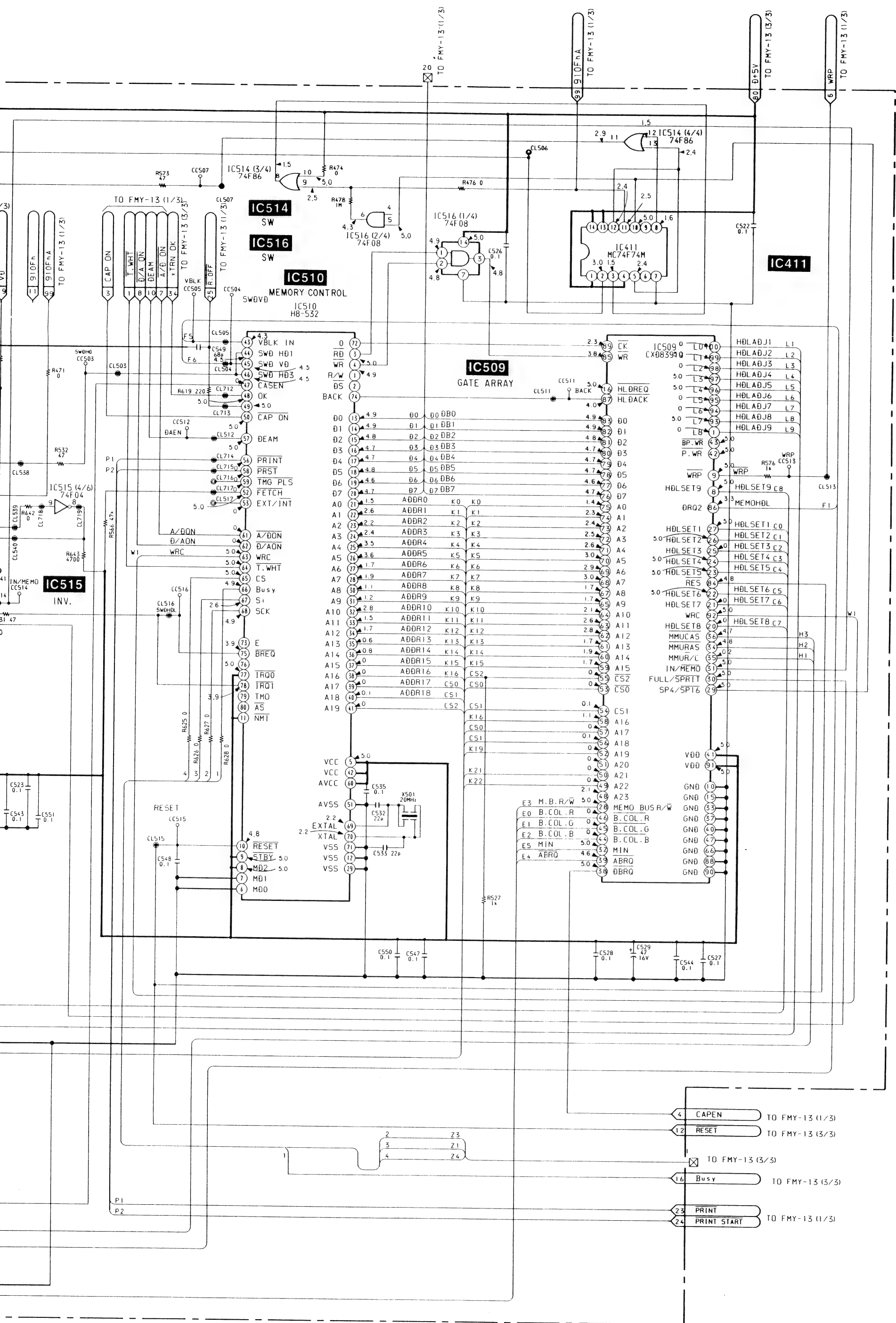


**FMY-13 BOARD (2/3)**











## FMY-13P

## 1-4. ELECTRICAL PARTS LIST

## NOTE:

- Items marked "\*" are not stocked because they are seldom required for routine servicing. Some delay should be expected when ordering these items.

- All variable and adjustable resistors have characteristic curve B, unless otherwise stated.

## RESISTORS

- All resistors are in ohms.
- F: non-flammable

When indicating part by reference number, please include the board name.

## CAPACITORS

MF:  $\mu$ F, PF:  $\mu$  $\mu$ F

## COILS

MMH: mH, UH:  $\mu$ H

The components identified by shading and mark are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
	*A-8275-599-A	FMY-13P BOARD, COMPLETE *****		C409	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
		<BUZZER>		C410	1-126-204-11	ELECT 47 $\mu$ F	20% 16V
				C411	1-126-204-11	ELECT 47 $\mu$ F	20% 16V
BZ901	1-529-069-11	BUZZER, PIEZOELECTRIC		C412	1-126-204-11	ELECT 47 $\mu$ F	20% 16V
		<CAPACITOR>		C413	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
				C414	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C102	1-163-227-11	CERAMIC 10PF	50V	C415	1-126-204-11	ELECT 47 $\mu$ F	20% 16V
C103	1-126-204-11	ELECT 47 $\mu$ F	20% 16V	C416	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C104	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C417	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C105	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C418	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C106	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C420	1-164-004-11	CERAMIC 0.1 $\mu$ F	10% 25V
C108	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C421	1-163-132-00	CERAMIC 430PF	5% 50V
C110	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C422	1-163-113-00	CERAMIC 68PF	5% 50V
C111	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C423	1-163-113-00	CERAMIC 68PF	5% 50V
C112	1-163-117-00	CERAMIC 100PF	5% 50V	C424	1-163-113-00	CERAMIC 68PF	5% 50V
C113	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C425	1-163-113-00	CERAMIC 68PF	5% 50V
C114	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C426	1-163-113-00	CERAMIC 68PF	5% 50V
C115	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C427	1-163-113-00	CERAMIC 68PF	5% 50V
C116	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C428	1-163-113-00	CERAMIC 68PF	5% 50V
C202	1-163-227-11	CERAMIC 10PF	50V	C429	1-163-113-00	CERAMIC 68PF	5% 50V
C204	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C430	1-163-113-00	CERAMIC 68PF	5% 50V
C205	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C440	1-163-275-11	CERAMIC 0.001 $\mu$ F	5% 50V
C206	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C441	1-163-275-11	CERAMIC 0.001 $\mu$ F	5% 50V
C208	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C442	1-163-231-11	CERAMIC 15PF	5% 50V
C210	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C443	1-163-275-11	CERAMIC 0.001 $\mu$ F	5% 50V
C211	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C444	1-163-243-11	CERAMIC 47PF	5% 50V
C212	1-163-117-00	CERAMIC 100PF	5% 50V	C445	1-163-275-11	CERAMIC 0.001 $\mu$ F	5% 50V
C213	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C446	1-163-275-11	CERAMIC 0.001 $\mu$ F	5% 50V
C214	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C447	1-163-275-11	CERAMIC 0.001 $\mu$ F	5% 50V
C215	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C501	1-164-346-11	CERAMIC 1 $\mu$ F	16V
C216	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C502	1-164-346-11	CERAMIC 1 $\mu$ F	16V
C302	1-163-227-11	CERAMIC 10PF	50V	C503	1-164-346-11	CERAMIC 1 $\mu$ F	16V
C304	1-163-077-00	CERAMIC 0.1 $\mu$ F	10% 25V	C504	1-164-346-11	CERAMIC 1 $\mu$ F	16V
C305	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C505	1-164-346-11	CERAMIC 1 $\mu$ F	16V
C306	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C506	1-164-346-11	CERAMIC 1 $\mu$ F	16V
C308	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C507	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C310	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C508	1-126-204-11	ELECT 47 $\mu$ F	20% 16V
C311	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C519	1-163-109-00	CERAMIC 47PF	5% 50V
C312	1-163-117-00	CERAMIC 100PF	5% 50V	C520	1-163-109-00	CERAMIC 47PF	5% 50V
C313	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C521	1-163-117-00	CERAMIC 100PF	5% 50V
C314	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C522	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C315	1-126-217-11	ELECT 15 $\mu$ F	20% 10V	C523	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C316	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C526	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C401	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C527	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C402	1-164-004-11	CERAMIC 0.1 $\mu$ F	10% 25V	C528	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V
C403	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C529	1-126-204-11	ELECT 47 $\mu$ F	20% 16V
C404	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C530	1-164-346-11	CERAMIC 1 $\mu$ F	16V
C406	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C531	1-163-109-00	CERAMIC 47PF	5% 50V
C407	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C532	1-163-235-11	CERAMIC 22PF	5% 50V
C408	1-163-038-00	CERAMIC 0.1 $\mu$ F	25V	C533	1-163-235-11	CERAMIC 22PF	5% 50V
				C534	1-126-204-11	ELECT 47 $\mu$ F	20% 16V

# **FMY-13P**

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C535	1-163-038-00	CERAMIC 0.1uF	25V	FB145	1-412-390-21	INDUCTOR CHIP OUH	
C536	1-163-109-00	CERAMIC 47PF	5% 50V	FB147	1-412-390-21	INDUCTOR CHIP OUH	
C537	1-163-038-00	CERAMIC 0.1uF	25V				
C538	1-163-038-00	CERAMIC 0.1uF	25V	FB149	1-412-390-21	INDUCTOR CHIP OUH	
C539	1-163-038-00	CERAMIC 0.1uF	25V	FB150	1-412-390-21	INDUCTOR CHIP OUH	
				FB151	1-412-390-21	INDUCTOR CHIP OUH	
C540	1-163-038-00	CERAMIC 0.1uF	25V	FB152	1-412-390-21	INDUCTOR CHIP OUH	
C541	1-163-038-00	CERAMIC 0.1uF	25V	FB153	1-412-390-21	INDUCTOR CHIP OUH	
C542	1-163-038-00	CERAMIC 0.1uF	25V				
C543	1-163-038-00	CERAMIC 0.1uF	25V	FB154	1-412-390-21	INDUCTOR CHIP OUH	
C544	1-163-038-00	CERAMIC 0.1uF	25V				
						<IC>	
C545	1-126-204-11	ELECT 47uF	20% 16V	IC101	8-752-337-04	IC CXD1176	
C546	1-163-038-00	CERAMIC 0.1uF	25V	IC201	8-752-337-04	IC CXD1176	
C547	1-163-038-00	CERAMIC 0.1uF	25V	IC301	8-752-337-04	IC CXD1176	
C548	1-163-038-00	CERAMIC 0.1uF	25V	IC401	8-759-093-19	IC CXD8444Q	
C549	1-163-113-00	CERAMIC 68PF	5% 50V	IC402	8-752-338-46	IC CXD1178Q	
C550	1-163-038-00	CERAMIC 0.1uF	25V	IC403	*8-759-258-60	IC M5M27C101FP-UP12M-E2	
C551	1-163-038-00	CERAMIC 0.1uF	25V	IC404	*8-759-258-61	IC M5M27C101FP-UP12S-E2	
C601	1-163-037-11	CERAMIC 0.022uF	10% 25V	IC405	8-759-038-00	IC MC74HC574AF	
C602	1-128-065-11	ELECT 68uF	20% 10V	IC410	8-759-927-29	IC SN74HC04ANS	
C603	1-163-037-11	CERAMIC 0.022uF	10% 25V	IC411	8-759-033-16	IC MC74F74M	
C604	1-128-065-11	ELECT 68uF	20% 10V	IC501	8-759-255-89	IC HM514400AS7GS-EL	
C605	1-163-037-11	CERAMIC 0.022uF	10% 25V	IC502	8-759-255-89	IC HM514400AS7GS-EL	
C606	1-126-204-11	ELECT 47uF	20% 16V	IC503	8-759-255-89	IC HM514400AS7GS-EL	
C607	1-163-037-11	CERAMIC 0.022uF	10% 25V	IC504	8-759-255-89	IC HM514400AS7GS-EL	
C608	1-126-204-11	ELECT 47uF	20% 16V	IC505	8-759-255-89	IC HM514400AS7GS-EL	
C706	1-163-038-00	CERAMIC 0.1uF	25V	IC506	8-759-255-89	IC HM514400AS7GS-EL	
C901	1-163-038-00	CERAMIC 0.1uF	25V	IC507	8-759-114-07	IC UPD65013GF-407-3BA	
C902	1-163-038-00	CERAMIC 0.1uF	25V	IC508	8-759-114-09	IC UPD65006GF-250-3B8	
C903	1-163-038-00	CERAMIC 0.1uF	25V	IC509	8-759-084-15	IC CXD8391Q	
C904	1-163-038-00	CERAMIC 0.1uF	25V	IC510	*8-759-262-39	IC HD6475368F-FMY13-01	
C905	1-163-038-00	CERAMIC 0.1uF	25V	IC511	8-759-992-78	IC 74F257ASJ-T5L	
C906	1-163-097-00	CERAMIC 15PF	5% 50V	IC512	8-759-989-03	IC 74F32SJ	
C907	1-163-097-00	CERAMIC 15PF	5% 50V	IC513	8-759-989-03	IC 74F32SJ	
C909	1-128-065-11	ELECT 68uF	20% 10V	IC514	8-759-948-02	IC 74F86SJ	
C910	1-163-038-00	CERAMIC 0.1uF	25V	IC515	8-759-948-01	IC 74F04SJ	
C911	1-163-038-00	CERAMIC 0.1uF	25V	IC516	8-759-989-01	IC 74F08SJ	
C912	1-163-038-00	CERAMIC 0.1uF	25V	IC901	8-759-265-37	IC MB89093PFV-G-125-BND	
				IC902	8-759-937-56	IC S-8054ALB-LM-S	
						<INDUCTOR>	
CN1	1-565-212-11	CONNECTOR, FPC (ZIF) 26P		L600	1-424-090-11	COIL, LINE FILTER	
CN2	1-565-212-11	CONNECTOR, FPC (ZIF) 26P		L601	1-424-090-11	COIL, LINE FILTER	
CN4	1-566-532-11	CONNECTOR, FPC (ZIF) 16P		L602	1-424-090-11	COIL, LINE FILTER	
CN5	1-566-523-11	CONNECTOR, FPC (ZIF) 7P		L900	1-424-090-11	COIL, LINE FILTER	
CN6	*1-506-472-11	PIN, CONNECTOR 7P		L901	1-424-090-11	COIL, LINE FILTER	
CN7	*1-506-472-11	PIN, CONNECTOR 7P					
CN8	*1-560-894-00	PIN, CONNECTOR 6P					
CN9	1-506-469-11	PIN, CONNECTOR 4P					
CN10	1-506-469-11	PIN, CONNECTOR 4P					
						<TRANSISTOR>	
				Q101	8-729-010-75	TRANSISTOR MSC4116-B/C	
				Q102	8-729-402-84	TRANSISTOR XN4601	
				Q201	8-729-010-75	TRANSISTOR MSC4116-B/C	
				Q202	8-729-402-84	TRANSISTOR XN4601	
				Q301	8-729-010-75	TRANSISTOR MSC4116-B/C	
				Q302	8-729-402-84	TRANSISTOR XN4601	
				Q401	8-729-901-01	TRANSISTOR DTC144EK	
				Q440	8-729-010-75	TRANSISTOR MSC4116-B/C	
				Q441	8-729-010-75	TRANSISTOR MSC4116-B/C	
				Q442	8-729-010-75	TRANSISTOR MSC4116-B/C	
				Q902	8-729-901-01	TRANSISTOR DTC144EK	
				Q903	8-729-901-01	TRANSISTOR DTC144EK	
						<RESISTOR>	
				R101	1-216-022-00	METAL 75 5% 1/10W	
				R104	1-216-017-00	METAL 47 5% 1/10W	
				R105	1-216-033-00	METAL 220 5% 1/10W	

**FMY-13P**

Ref.No	Part No.	Description	Remark			Ref.No	Part No.	Description	Remark		
R106	1-216-033-00	METAL	220	5%	1/10W	R332	1-216-041-00	METAL	470	5%	1/10W
R107	1-216-033-00	METAL	220	5%	1/10W	R333	1-216-041-00	METAL	470	5%	1/10W
						R334	1-216-041-00	METAL	470	5%	1/10W
R108	1-216-033-00	METAL	220	5%	1/10W	R335	1-216-041-00	METAL	470	5%	1/10W
R109	1-216-033-00	METAL	220	5%	1/10W	R336	1-216-041-00	METAL	470	5%	1/10W
R110	1-216-033-00	METAL	220	5%	1/10W	R337	1-216-041-00	METAL	470	5%	1/10W
R111	1-216-033-00	METAL	220	5%	1/10W	R340	1-216-009-00	METAL	22	5%	1/10W
R112	1-216-033-00	METAL	220	5%	1/10W	R341	1-216-025-00	METAL	100	5%	1/10W
R129	1-216-033-00	METAL	220	5%	1/10W	R342	1-216-073-00	METAL	10K	5%	1/10W
R130	1-216-041-00	METAL	470	5%	1/10W	R343	1-216-073-00	METAL	10K	5%	1/10W
R131	1-216-041-00	METAL	470	5%	1/10W	R344	1-216-053-00	METAL	1.5K	5%	1/10W
R132	1-216-041-00	METAL	470	5%	1/10W	R345	1-216-033-00	METAL	220	5%	1/10W
R133	1-216-041-00	METAL	470	5%	1/10W	R346	1-216-053-00	METAL	1.5K	5%	1/10W
R134	1-216-041-00	METAL	470	5%	1/10W	R347	1-216-295-00	METAL	0	5%	1/10W
R135	1-216-041-00	METAL	470	5%	1/10W	R401	1-216-295-00	METAL	0	5%	1/10W
R136	1-216-041-00	METAL	470	5%	1/10W	R402	1-216-017-00	METAL	47	5%	1/10W
R137	1-216-041-00	METAL	470	5%	1/10W	R403	1-216-032-00	METAL	200	5%	1/10W
R140	1-216-009-00	METAL	22	5%	1/10W	R404	1-216-032-00	METAL	200	5%	1/10W
R141	1-216-025-00	METAL	100	5%	1/10W	R405	1-216-032-00	METAL	200	5%	1/10W
R142	1-216-073-00	METAL	10K	5%	1/10W	R406	1-216-061-00	METAL	3.3K	5%	1/10W
R143	1-216-073-00	METAL	10K	5%	1/10W	R422	1-216-065-00	METAL	4.7K	5%	1/10W
R144	1-216-053-00	METAL	1.5K	5%	1/10W	R423	1-216-295-00	METAL	0	5%	1/10W
R145	1-216-033-00	METAL	220	5%	1/10W	R424	1-216-295-00	METAL	0	5%	1/10W
R146	1-216-053-00	METAL	1.5K	5%	1/10W	R426	1-216-295-00	METAL	0	5%	1/10W
R147	1-216-295-00	METAL	0	5%	1/10W	R427	1-216-069-00	METAL	6.8K	5%	1/10W
R201	1-216-022-00	METAL	75	5%	1/10W	R428	1-216-069-00	METAL	6.8K	5%	1/10W
R204	1-216-017-00	METAL	47	5%	1/10W	R429	1-216-049-00	METAL	1K	5%	1/10W
R205	1-216-033-00	METAL	220	5%	1/10W	R429	1-216-049-00	METAL	1K	5%	1/10W
R206	1-216-033-00	METAL	220	5%	1/10W	R430	1-216-295-00	METAL	0	5%	1/10W
R207	1-216-033-00	METAL	220	5%	1/10W	R440	1-216-295-00	METAL	0	5%	1/10W
R208	1-216-033-00	METAL	220	5%	1/10W	R441	1-216-295-00	METAL	0	5%	1/10W
R209	1-216-033-00	METAL	220	5%	1/10W	R442	1-216-073-00	METAL	10K	5%	1/10W
R210	1-216-033-00	METAL	220	5%	1/10W	R443	1-216-063-00	METAL	3.9K	5%	1/10W
R211	1-216-033-00	METAL	220	5%	1/10W	R444	1-216-037-00	METAL	330	5%	1/10W
R212	1-216-033-00	METAL	220	5%	1/10W	R445	1-216-025-00	METAL	100	5%	1/10W
R229	1-216-033-00	METAL	220	5%	1/10W	R446	1-216-077-00	METAL	15K	5%	1/10W
R230	1-216-041-00	METAL	470	5%	1/10W	R447	1-216-073-00	METAL	10K	5%	1/10W
R231	1-216-041-00	METAL	470	5%	1/10W	R448	1-216-033-00	METAL	220	5%	1/10W
R232	1-216-041-00	METAL	470	5%	1/10W	R449	1-216-037-00	METAL	330	5%	1/10W
R233	1-216-041-00	METAL	470	5%	1/10W	R450	1-216-033-00	METAL	220	5%	1/10W
R234	1-216-041-00	METAL	470	5%	1/10W	R451	1-216-077-00	METAL	15K	5%	1/10W
R235	1-216-041-00	METAL	470	5%	1/10W	R452	1-216-073-00	METAL	10K	5%	1/10W
R236	1-216-041-00	METAL	470	5%	1/10W	R453	1-216-033-00	METAL	220	5%	1/10W
R237	1-216-041-00	METAL	470	5%	1/10W	R454	1-216-037-00	METAL	330	5%	1/10W
R240	1-216-009-00	METAL	22	5%	1/10W	R455	1-216-033-00	METAL	220	5%	1/10W
R241	1-216-025-00	METAL	100	5%	1/10W	R456	1-216-121-00	METAL	1M	5%	1/10W
R242	1-216-073-00	METAL	10K	5%	1/10W	R457	1-216-121-00	METAL	1M	5%	1/10W
R243	1-216-073-00	METAL	10K	5%	1/10W	R458	1-216-121-00	METAL	1M	5%	1/10W
R244	1-216-053-00	METAL	1.5K	5%	1/10W	R459	1-216-295-00	METAL	0	5%	1/10W
R245	1-216-033-00	METAL	220	5%	1/10W	R471	1-216-295-00	METAL	0	5%	1/10W
R246	1-216-053-00	METAL	1.5K	5%	1/10W	R474	1-216-295-00	METAL	0	5%	1/10W
R247	1-216-295-00	METAL	0	5%	1/10W	R476	1-216-295-00	METAL	0	5%	1/10W
R301	1-216-022-00	METAL	75	5%	1/10W	R478	1-216-121-00	METAL	1M	5%	1/10W
R304	1-216-017-00	METAL	47	5%	1/10W	R501	1-216-017-00	METAL	47	5%	1/10W
R305	1-216-033-00	METAL	220	5%	1/10W	R502	1-216-017-00	METAL	47	5%	1/10W
R306	1-216-033-00	METAL	220	5%	1/10W	R503	1-216-017-00	METAL	47	5%	1/10W
R307	1-216-033-00	METAL	220	5%	1/10W	R504	1-216-017-00	METAL	47	5%	1/10W
R308	1-216-033-00	METAL	220	5%	1/10W	R505	1-216-017-00	METAL	47	5%	1/10W
R309	1-216-033-00	METAL	220	5%	1/10W	R506	1-216-017-00	METAL	47	5%	1/10W
R310	1-216-033-00	METAL	220	5%	1/10W	R507	1-216-017-00	METAL	47	5%	1/10W
R311	1-216-033-00	METAL	220	5%	1/10W	R508	1-216-017-00	METAL	47	5%	1/10W
R312	1-216-033-00	METAL	220	5%	1/10W	R509	1-216-017-00	METAL	47	5%	1/10W
R329	1-216-033-00	METAL	220	5%	1/10W	R510	1-216-017-00	METAL	47	5%	1/10W
R330	1-216-041-00	METAL	470	5%	1/10W	R511	1-216-049-00	METAL	1K	5%	1/10W
R331	1-216-041-00	METAL	470	5%	1/10W						

# **FMY-13P**

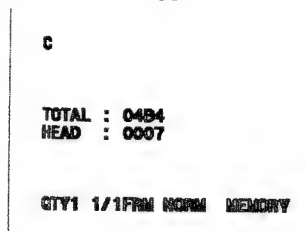
Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R512	1-216-049-00	METAL	1K 5% 1/10W	R617	1-216-033-00	METAL	220 5% 1/10W
R513	1-216-017-00	METAL	47 5% 1/10W	R618	1-216-033-00	METAL	220 5% 1/10W
R514	1-216-017-00	METAL	47 5% 1/10W	R619	1-216-033-00	METAL	220 5% 1/10W
R515	1-216-017-00	METAL	47 5% 1/10W	R620	1-216-295-00	METAL	0 5% 1/10W
R517	1-216-017-00	METAL	47 5% 1/10W	R621	1-216-295-00	METAL	0 5% 1/10W
R518	1-216-017-00	METAL	47 5% 1/10W	R622	1-216-295-00	METAL	0 5% 1/10W
R519	1-216-025-00	METAL	100 5% 1/10W	R623	1-216-295-00	METAL	0 5% 1/10W
R525	1-216-017-00	METAL	47 5% 1/10W	R624	1-216-295-00	METAL	0 5% 1/10W
R526	1-216-017-00	METAL	47 5% 1/10W	R625	1-216-295-00	METAL	0 5% 1/10W
R527	1-216-049-00	METAL	1K 5% 1/10W	R626	1-216-295-00	METAL	0 5% 1/10W
R530	1-216-041-00	METAL	470 5% 1/10W	R627	1-216-295-00	METAL	0 5% 1/10W
R531	1-216-017-00	METAL	47 5% 1/10W	R628	1-216-295-00	METAL	0 5% 1/10W
R532	1-216-017-00	METAL	47 5% 1/10W	R642	1-216-295-00	METAL	0 5% 1/10W
R536	1-216-017-00	METAL	47 5% 1/10W	R643	1-216-065-00	METAL	4.7K 5% 1/10W
R541	1-216-017-00	METAL	47 5% 1/10W	R647	1-216-295-00	METAL	0 5% 1/10W
R542	1-216-065-00	METAL	4.7K 5% 1/10W	R650	1-216-033-00	METAL	220 5% 1/10W
R551	1-216-295-00	METAL	0 5% 1/10W	R651	1-216-295-00	METAL	0 5% 1/10W
R556	1-216-295-00	METAL	0 5% 1/10W	R652	1-216-033-00	METAL	220 5% 1/10W
R564	1-216-033-00	METAL	220 5% 1/10W	R655	1-216-033-00	METAL	220 5% 1/10W
R565	1-216-033-00	METAL	220 5% 1/10W	R816	1-216-295-00	METAL	0 5% 1/10W
R566	1-216-089-91	METAL	47K 5% 1/10W	R817	1-216-295-00	METAL	0 5% 1/10W
R568	1-216-295-00	METAL	0 5% 1/10W	R818	1-216-295-00	METAL	0 5% 1/10W
R572	1-216-089-91	METAL	47K 5% 1/10W	R819	1-216-066-00	METAL	5.1K 5% 1/10W
R573	1-216-017-00	METAL	47 5% 1/10W	R820	1-216-066-00	METAL	5.1K 5% 1/10W
R574	1-216-017-00	METAL	47 5% 1/10W	R821	1-216-066-00	METAL	5.1K 5% 1/10W
R575	1-216-017-00	METAL	47 5% 1/10W	R822	1-216-066-00	METAL	5.1K 5% 1/10W
R576	1-216-049-00	METAL	1K 5% 1/10W	R823	1-216-025-00	METAL	100 5% 1/10W
R578	1-216-295-00	METAL	0 5% 1/10W	R824	1-216-033-00	METAL	220 5% 1/10W
R579	1-216-295-00	METAL	0 5% 1/10W	R901	1-216-089-91	METAL	47K 5% 1/10W
R580	1-216-073-00	METAL	10K 5% 1/10W	R908	1-216-089-91	METAL	47K 5% 1/10W
R582	1-216-295-00	METAL	0 5% 1/10W	R910	1-216-089-91	METAL	47K 5% 1/10W
R583	1-216-033-00	METAL	220 5% 1/10W	R911	1-216-089-91	METAL	47K 5% 1/10W
R584	1-216-033-00	METAL	220 5% 1/10W	R912	1-216-089-91	METAL	47K 5% 1/10W
R585	1-216-033-00	METAL	220 5% 1/10W	R915	1-216-089-91	METAL	47K 5% 1/10W
R586	1-216-033-00	METAL	220 5% 1/10W	R916	1-216-089-91	METAL	47K 5% 1/10W
R587	1-216-033-00	METAL	220 5% 1/10W	R917	1-216-025-00	METAL	100 5% 1/10W
R588	1-216-033-00	METAL	220 5% 1/10W	R918	1-216-089-91	METAL	47K 5% 1/10W
R589	1-216-033-00	METAL	220 5% 1/10W	R919	1-216-089-91	METAL	47K 5% 1/10W
R590	1-216-037-00	METAL	330 5% 1/10W	R920	1-216-025-00	METAL	100 5% 1/10W
R591	1-216-037-00	METAL	330 5% 1/10W	R921	1-216-025-00	METAL	100 5% 1/10W
R592	1-216-033-00	METAL	220 5% 1/10W	R922	1-216-089-91	METAL	47K 5% 1/10W
R593	1-216-033-00	METAL	220 5% 1/10W	R923	1-216-025-00	METAL	100 5% 1/10W
R594	1-216-033-00	METAL	220 5% 1/10W	R924	1-216-089-91	METAL	47K 5% 1/10W
R595	1-216-033-00	METAL	220 5% 1/10W	R926	1-216-295-00	METAL	0 5% 1/10W
R596	1-216-033-00	METAL	220 5% 1/10W	R927	1-216-295-00	METAL	0 5% 1/10W
R597	1-216-033-00	METAL	220 5% 1/10W	R928	1-216-109-00	METAL	330K 5% 1/10W
R599	1-216-033-00	METAL	220 5% 1/10W	R929	1-216-025-00	METAL	100 5% 1/10W
R600	1-216-033-00	METAL	220 5% 1/10W	R931	1-216-025-00	METAL	100 5% 1/10W
R601	1-216-049-00	METAL	1K 5% 1/10W	R932	1-216-065-00	METAL	4.7K 5% 1/10W
R602	1-216-033-00	METAL	220 5% 1/10W	R936	1-216-097-00	METAL	100K 5% 1/10W
R603	1-216-033-00	METAL	220 5% 1/10W	R937	1-216-049-00	METAL	1K 5% 1/10W
R604	1-216-033-00	METAL	220 5% 1/10W	R939	1-216-065-00	METAL	4.7K 5% 1/10W
R605	1-216-033-00	METAL	220 5% 1/10W	R942	1-216-065-00	METAL	4.7K 5% 1/10W
R606	1-216-033-00	METAL	220 5% 1/10W	R945	1-216-041-00	METAL	470 5% 1/10W
R607	1-216-033-00	METAL	220 5% 1/10W	<CRYSTAL>			
R608	1-216-033-00	METAL	220 5% 1/10W	X501	1-579-868-11	VIBRATOR, CRYSTAL	
R609	1-216-033-00	METAL	220 5% 1/10W	X901	1-579-550-11	VIBRATOR, CRYSTAL	
R610	1-216-033-00	METAL	220 5% 1/10W	XTL901	1-579-369-21	VIBRATOR	
R611	1-216-033-00	METAL	220 5% 1/10W	*****			
R612	1-216-033-00	METAL	220 5% 1/10W				
R613	1-216-033-00	METAL	220 5% 1/10W				
R614	1-216-033-00	METAL	220 5% 1/10W				
R615	1-216-033-00	METAL	220 5% 1/10W				
R616	1-216-033-00	METAL	220 5% 1/10W				

## 2. SERVICE MODE

### 2-1. ENTERING THE SERVICE MODE

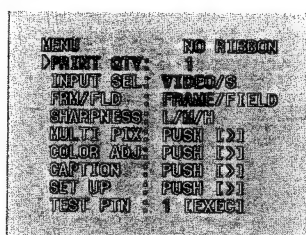
\* Test signal

1. Turn on the power switch of the main unit while pressing the STOP and MEMORY IN keys simultaneously.
- \* The "COLOR VIDEO PRINTER" display blinks on the monitor screen. Press these keys until the motor is loaded and stopped in the meantime, then release them. The screen below then appears.

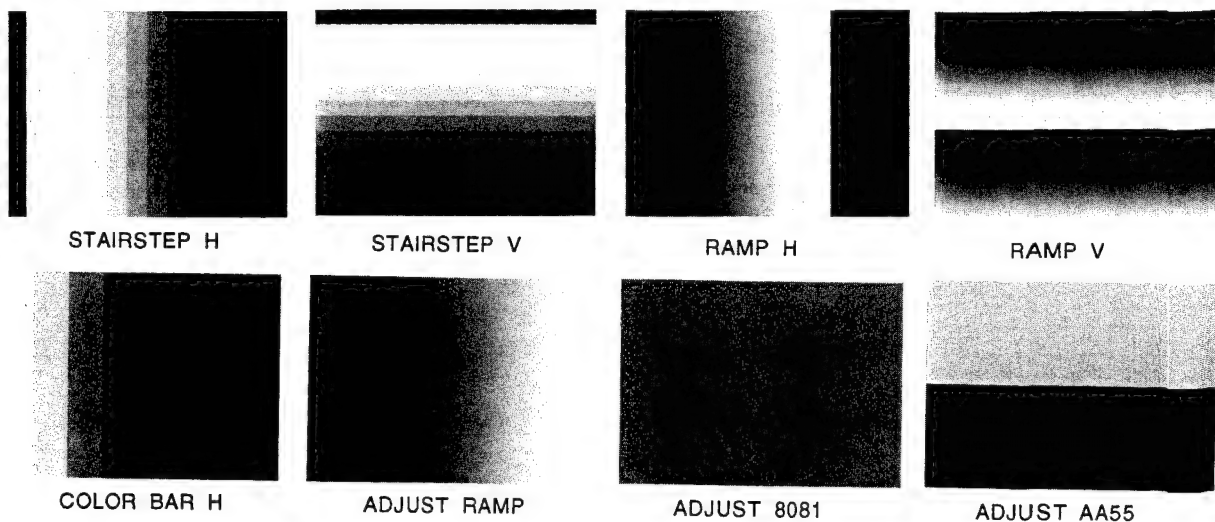


### 2-2. ENTERING THE PRINT OPERATION OF PATTERN SIGNAL

- 1) Press the SOURCE/MEMORY key on the above screen to display the memory screen and press the menu key. The screen below then appears.



- 2) Move the cursor to TEST PTN by cursor keys ( $\Delta$  and  $\nabla$ ) and select the desired pattern from among the eight patterns below by cursor keys ( $\triangleleft$  and  $\triangleright$ ).



- 3) The screen becomes black when the EXEC key is pressed. (The PLEASE WAIT display then blinks.)
- 4) Press the PRINT key to print and output a pattern.
- 5) To change the pattern, execute step (2) and press the EXEC key. Then, print and output the pattern using a PRINT key.

### 2-3. RESETTING THE PRINT NUMBER COUNTER

\* Use the counter during head replacement.

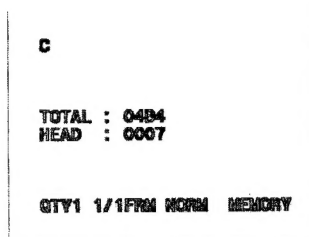
- 1) Insert an adjustment tool RM-95 (J-6082-053-A) remote controller into J-101 on the VA-76 board (with the power turned on).
- 2) To cancel a protector by RM-95, set as shown below.

Page	6	Data	80	Address	00
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- 3) Turn off the power, then turn on the power again. After that, set as shown below by a remote controller.

Page	F	Data	00 H	Address	EE
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\* Press the PAUSE key and turn off the power. The counter is then reset.



HEAD : 0000

Total : Accumulated total

\*The accumulated total cannot be reset.

### 2-4. REPLACING THE HEAD

Head position adjustment tool handling (J-9000-250-A)

1. Print two sheets of stair step signals (H) before head replacement (for comparison of each density).
2. Disconnect 10-pin and 12-pin flat cables from the HM board. (Fig. 1)

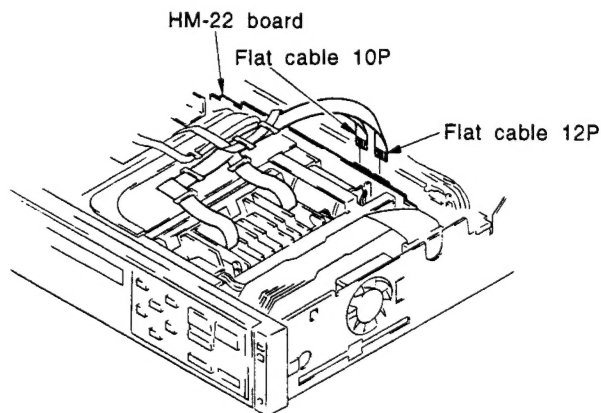


Fig. 1



3. Remove the ribbon guide from the head. (Fig. 2)

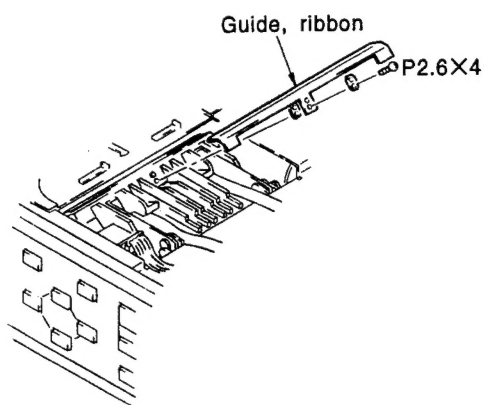


Fig. 2

4. Attach portion R of the tool to the shaft of a platen roller. (Fig. 3)
5. Insert RM-95 (J-6082-053-A) into the unit.

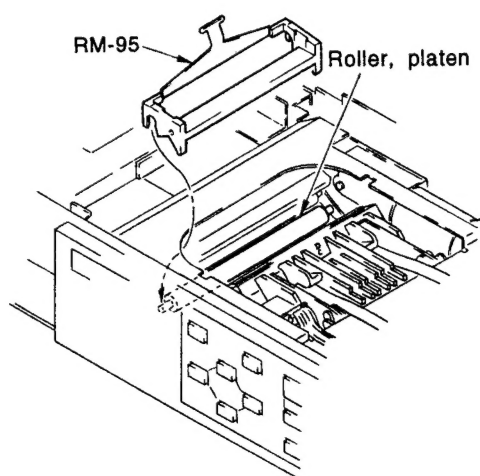


Fig. 3

6. Loosen the two screws, set as shown below by RM-95, and press the PAUSE button.

Page	8	Data	01	Address	10
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7. Move the head position upward and set as shown below.

Page	8	Data	01	Address	1A
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The head position moves upward every time the PAUSE button is pressed. Move the head upward from the home position by three steps. (Fig. 4)

(Head has five positions. 0 → 1 → 2 → 3 → 4)

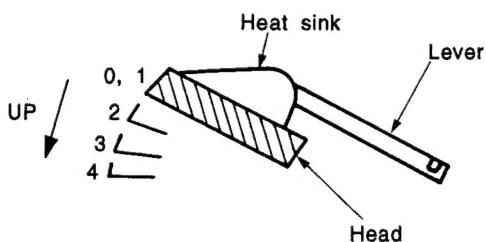


Fig. 4 Five Positions of the Head

8. Tighten the two screws and return the head to the home position. Remove the tool.

Page	8	Data	08	Address	10
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9. Attach the ribbon guide and flat cables.  
10. Print two sheets of stair step signals (H) and compare the second sheet with the sheet printed before head replacement to adjust the density.  
(For more details, refer to the electrical adjustment and head replacement in Service Manual.)

## CORRECTION

Correct the 7-1-3. confirmation of the Input Signal as shown below.  
(UP-1200EPM Service manual Page 178)

### 7-1-3. Confirmation of the Input Signal

The video signal generated from a pattern generator is used for video circuit adjustment as an adjustment signal. Therefore, it is necessary that this video output signal satisfies the required specification.

#### 1. During S video (S VIDEO) input

Connect an oscilloscope to the Y signal terminal of the S video input terminal, and confirm that the sync signal of a Y signal is 300 mV, the amplitude of the video portion is 700 mV, and the setup level is 0 mV. (When the VTR with an S video output terminal is used, confirm that no chroma signal and burst signal remain.) Moreover, connect an oscilloscope to the chroma signal terminal of the S video input terminal, and confirm that the burst signal amplitude of a chroma signal is flat (300 mV) and that the amplitude ratio of a burst signal to a chroma signal is  $0.30 : 0.66$ . The Y signal and chroma signal used for the adjustment are shown in Fig. 7-2.

The setup level is the potential difference between the black and pedestal levels.

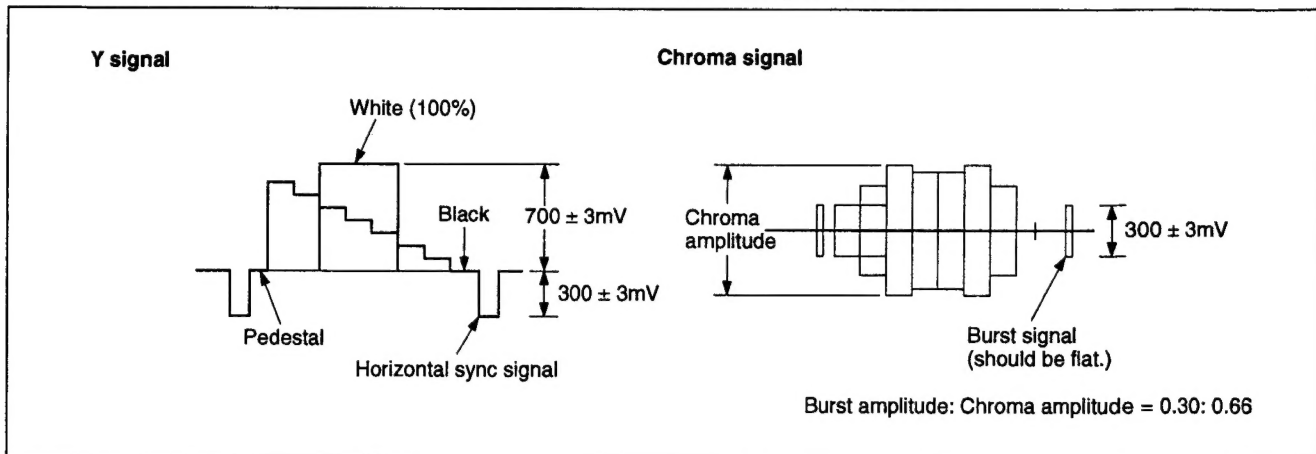


Fig. 7-2. Color-Bar Signal in Pattern Generator (during 75-ohm Termination)

#### 2. During video (VIDEO) input

Connect an oscilloscope to the video input terminal, and confirm that the sync signal amplitude of a video signal is 300 mV, the amplitude of the video portion is 700 mV, the setup level is 0 mV, the amplitude of a burst signal is flat (300 mV), and the level ratio of a burst signal to a "red" signal is  $0.30 : 0.66$ .

The video signal (color-bar) used for the adjustment is shown in Fig. 7-3.

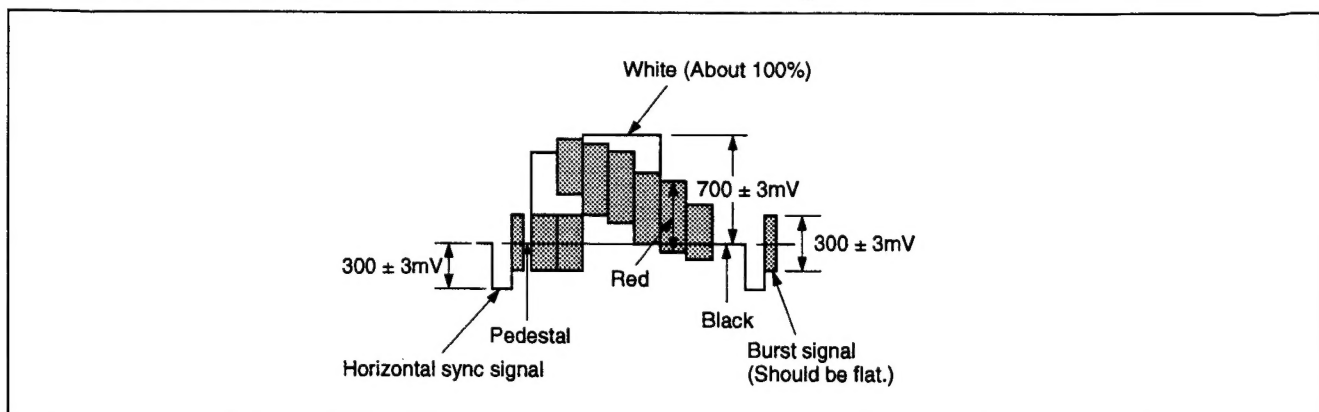


Fig. 7-3. Color-Bar Signal in Pattern Generator (during 75-ohm Termination)